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PART IV.—EDUCATION, SCIENCE, AND ART (C).

Administration Report of the Director of Medical and Sanitary Services for 1939.

(Dr. S. T. GUNASEKARA.)

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DEPARTMENT OF MEDICAL AND SANITARY SERVICES.

REPORT OF THE DIRECTOR OF MEDICAL AND SANITARY SERVICES FOR THE YEAR 1939.

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I.—ADMINISTRATION.

(a) Legislation affecting Public Health enacted during the year.

- (1) An Ordinance (No. 32 of 1939) to make provision for the payment of maternity benefits to women workers and for other matters incidental to the employment of such women before and after confinement was passed.
- (2) Filariasis (Prevention) Regulations, 1939, were framed under the Quarantine and Prevention of Diseases Ordinance, 1897—*Gazette* of March 10, 1939.
- (3) The draft of an Ordinance to amend the Lunacy Ordinance, 1873, to remedy certain defects was approved by the State Council. The question of drafting another Ordinance in accordance with the English Lunacy Act, to repeal the existing Lunacy Ordinance is under consideration.
- (4) A draft of an Ordinance to provide for the destruction and the prevention of the propagation of mosquitoes is being considered by the Departmental Committee on Malaria.

(b) Financial.

The revenue of this Department for the financial year ending September 30, 1939, was Rs. 1,993,140 and the expenditure was 12,918,696 (the Budget Estimate being Rs. 12,873,296). These figures do not include the cost of new buildings and improvements to, and maintenance of, existing ones.

II.—PUBLIC HEALTH AND GENERAL EPIDEMIOLOGY.

1.—GENERAL DISEASES.

The number of hospital cases, including cancer, is given in the return at the end of this report, and the number of dispensary cases is given in Section VI.

2.—COMMUNICABLE DISEASES.

The following table shows the number of cases and deaths from the communicable diseases notified for the whole Island inclusive of the three Municipal towns, and their distribution according to months and provinces :—

TABLE I.

Notified Cases of Communicable Diseases with Deaths and Fatality Rates.

		Cases.	Deaths.	Fatality Rate.	Fatality Rate for 1938.
Chickenpox	..	8,958	16	.18	.09
Cholera	..	7	5	71.43	—
Diphtheria	..	190	27	14.21	14.54
Dysentery	..	4,274	316	7.39	9.76
Enteric	..	2,975	513	17.24	19.85
Measles	..	2,098	6	.29	.23
Mumps	..	1,716	3	.17	.09
Pulmonary tuberculosis	..	2,683	751	27.99	28.99
Plague	..	—	—	—	77.77
Smallpox	..	1	—	—	—
Whooping cough	..	644	12	1.86	.81

Malaria.—A report on this disease is given in Section III.

Venereal Diseases.—A report on this is given in Section VI.

Parangi (Yaws).—There were 5,593 dispensary cases and 699 hospital cases with 1 death.

The work done during the year by the Medical Officers of Health, Field Medical Officers, and 1 Itinerating Medical Officer is given below :—

Province.	Cases.			Number Treated.	Injections given.				No. of Cases at the end of Year.			
	Total.	Infective.	Non-infective.		1st	2nd	3rd	4th	Total.	Infectious	Non-infectious	
Western	..	6..	6..	—	4..	2..	3..	3..	7..	15..	2..	4
Central	..	829..	184..	645..	453..	279..	163..	83..	45..	570..	133..	691
Southern	..	2,018..	1,075..	943..	1,580..	1,521..	1,193..	809..	329..	3,852..	466..	1,370
Eastern	..	569..	150..	419..	566..	566..	444..	149..	11..	1,170..	45..	524
Northern	..	17..	2..	15..	17..	17..	17..	8..	3..	45..	—	16
North-Western	..	1,973..	531..	1,442..	1,497..	590..	495..	279..	96..	1,460..	461..	1,512
North-Central	..	129..	34..	95..	129..	116..	107..	43..	11..	277..	11..	118
Sabaragamuwa	..	124..	99..	25..	122..	115..	108..	63..	10..	296..	23..	99
Uva	..	—	—	—	—	—	—	—	—	—	—	—
Total	..	5,665	2,081	3,584	4,368	3,206	2,530	1,437	512	7,685	1,141	4,334

Leprosy.—A report on this is given in Section VII.

3. VITAL STATISTICS.

Population, Births, Deaths, Immigration, and Infant Mortality.

Average Annual Estimated Population.	Average Annual Number of Births registered.	Average Annual Number of Deaths registered.	Excess of Registered Births over Deaths.	Excess of Immigrants over Emigrants.	Average Annual Birth Rate per 1,000	Average Annual Death Rate per 1,000	Mortality, i.e., Deaths of Children under 1 Year of Age per 1,000 Births.	
1939 .. 5,891,000 .. 212,112 .. 128,611 .. 83,501 .. 25,598 .. 36·0 .. 21·8 .. 166								

III.—HYGIENE AND SANITATION.

A.—GENERAL REVIEW OF WORK DONE AND PROGRESS MADE.

The remarks under this head given in past years will be found under general remarks at the end of the report. In future this heading will be deleted.

I.—PREVENTIVE MEASURES.

(a) MOSQUITO-BORNE DISEASES.

(1) Malaria.

(i.) General Island Mortality and Morbidity.—The number of hospital cases during 1939 was 107,345 which includes 1,150 cases which remained in hospitals at the end of 1938. A total of 3,103,450 were treated at the out-patient departments in hospitals and dispensaries. There were 2,677 deaths in hospitals from malaria in 1939, giving a fatality rate of 2 per cent. During the year, 106,195 admissions were for malaria.

The number of malaria cases treated annually in hospitals and dispensaries during the last five years is as follows :—

Year.	Cases treated in Hospitals.	Percentage of the Total Number of Patients treated in the Hospitals.		Cases treated in Dispensaries.	Percentage of the Total Number of Patients treated in the Dispensaries.	
		treated in the Hospitals.	Dispensaries.		treated in the Dispensaries.	Dispensaries.
1935 .. 161,313 ..	40·8 ..	5,293,468 ..	65·4			
1936 .. 73,192 ..	22·5 ..	2,873,463 ..	47·7			
1937 .. 57,190 ..	16·6 ..	2,251,786 ..	38·2			
1938 .. 54,413 ..	15·1 ..	1,998,666 ..	33·9			
1939 .. 107,345 ..	24·5 ..	3,103,450 ..	43·9			

(ii.) Malaria Epidemic of 1939.—Commencing in April and lasting up to August, this epidemic involved a slightly more extended area than that which was affected in 1934-35. Mortality, however, was less.

Malaria Morbidity during the Inter-epidemic Period.—From an analysis of weekly cards, the morbidity in the various catchment areas returned to normal in two to three years, without any disturbance in the seasonal transmissions.

Spleen Surveys of March, 1936, 1937, 1938 and 1939.—The spleen rates of 1936 and 1937 were naturally high, but, in 1938 a downward trend was observed over the epidemic zone in the Island. The Kalutara District retained its pride of place in 1939 with a rate of 1.6 per cent. and Mullaittivu the last (66.7 per cent).

Rainfall Conditions : (a) During the Inter-epidemic Period.—The North-East monsoon during 1938 and 1939 was a failure, otherwise rainfall during the intervening period was satisfactory.

(b) Immediately Preceding the Epidemic of 1939.—Rainfall was well below average in all the catchment areas, the Matara District suffering the worst deficiencies.

(2) Distribution, Intensity, and Duration of the Epidemic in 1939.

Distribution.—All the catchments of rivers from the Deduru-oya down to the Nilwala-ganga were affected, with one exception, the lower catchment of the Kalu-ganga. In the case of the Mahaweli-ganga the area involved extended from Nawalapitiya to Matale East.

Intensity.—The worst affected areas were the upper and lower basins of the Maha-oya, the middle catchment of the Kelani-ganga and the greater part of the Gin and Nilwala-gangas.

Duration.—The duration varied from 163 days to 131 days. In the three main rivers—Deduru, Maha-oya, and Kelani-ganga the duration was an average of 144 days.

Control Measures: Organization.—The Island was well covered by trained personnel and timely notice of the coming epidemic helped to marshal all the resources and labour force necessary. Temporary hospitals were opened at Alawwa, Rambukkana, Hewadiwela, Mawanella, and Dedigama.

Medical Comforts.—Medical Officers of Health, Field Medical Officers; and others undertook the distribution of Lactogen, malted milk, sago etc., in dispensaries, hospitals and temporary institutions.

Anti-larval Measures : Oiling.—The larger rivers and their tributaries passing through populated areas were given close attention by Field Medical Officers and Sanitary Assistants. Over 500 miles of rivers and streams were oiled regularly.

Destruction of Adult Mosquitoes.—Thirty-seven Sanitary Learners were sent out to the worst affected areas to undertake de-insectization work. Work was commenced on May 10th and closed down in the first week of July. Quinine distribution too was carried out by these men.

(iii.) **Malaria Parasitology.**—A total of 21,690 films were examined in the Island-wide survey of 1939, giving a parasite rate of 5.1. The work was done among school children. The Species distribution were B. T. 21.3 per cent., M. T. 27.6 per cent. and Quartan 51.5 per cent. In relation to the rainfall zones the parasite rates were highest in the dry zone and the lowest in the wet zone. Quartan was predominant in the Intermediate and dry zones, while Benign tertian dominated the wet zone.

(iv.) Special Campaign Centres.—

(A) **Anuradhapura: Incidence.**—There has been a drop since 1936.

Investigations.—Parasite and spleen surveys were carried out in March and September. The parasite rate for September was 16.4 as against 3.8 in the previous year.

The high spleen rate of 59.6 in September could be attributed to the rise of malaria in June, 1939.

Mosquito Adult Prevalence.—Adult prevalence was highest in the outside zone and lowest within the protected zone.

Control Measures.—The usual methods of oiling, Paris Green work, filling and drainage were adopted. Two new methods of control were also used—flushing and shading. Oiling cost Rs. 4,652.55, Paris Green Rs. 632.81.

Maintenance of Major Drainage Works and Elas.—All the channels were maintained in good condition.

(B) **Trincomalee Centre: Introduction.**—Dr. M. H. M. Abdul Cader, after special training in India and Malaya was appointed Assistant Medical Officer of Health. Extension of work was effected in the town and China Bay areas.

Incidence of Malaria.—The incidence of fever is comparatively low and any increases are only apparent and not real owing to the labour force now working in the area.

Investigations.—The usual efficiency tests of oiling and Anopheline surveys were carried out.

Control.—The measures adopted were oiling, Paris Green, fish distribution, and permanent works. Oiling cost Rs. 1,114 and Paris Green Rs. 126.

China Bay: Natchchikuda Peninsula.—A preliminary survey was carried out and control measures instituted. In addition to oiling, Paris Green, filling and drainage, de-insectization was introduced. The cost of the last measure was Rs. 141. Oiling cost Rs. 830 and Paris Green Rs. 11.

Kurunegala: Malaria Morbidity and the 1939 Epidemic.—Compared with the 1935 epidemic, the town did not suffer badly.

Spleen Rates.—The rate for March, 1939, was 16.3 per cent.

Anopheline Density.—The prevalence of Anopheles Culicifacies was lowest in the protected zone.

Control Measures.—A total of Rs. 14,468.86 was spent by the Department during 1939.

The measures consisted of oiling, filling, drainage, sluicing and stonewalling. The last two are the new methods adopted in addition to Fascine drains. Oiling cost Rs. 4,312. The control of wells is carried out by fish distribution and in addition patrolization is undertaken in terms of severe breeding.

Chilaw.—The usual methods mentioned above e.g., oiling and Paris Green were carried out. It is proposed to utilize gambusia affinis to control breeding in wells. The cost of oiling was Rs. 2,321 and Paris Green Rs. 268.

Spleen Survey.—The rate for March was 9.9 in the town as against 29.7 for areas outside the town.

Entomological Investigations.—The larval rates for the year were as follows:—Protected zone 4.2, controlled zone 6.1 and outside 11.3. The adult catches were protected zone 5, control zone 7.4 and Outside zone 11.4.

Badulla.—Work in this town was restricted to the months of May and September and the nature of work done was oiling (Rs. 826.20) and minor work i.e., filling &c. (Rs. 580).

Puttalam.—The usual routine work was done, oiling costing Rs. 637 Paris Green Rs. 34 and control of well-breeding by fish at a cost of Rs. 724.

Permanent Works.—Earth filling and refuse filling were undertaken in various parts of the town. The former cost Rs. 852 and the latter Rs. 455.

Morbidity.—The incidence of malaria in the town in 1939 compared favourably with other years.

Maho.—Oiling, filling and maintenance constituted the main lines of work at a cost of Rs. 947 and Rs. 2,163 for oiling and filling respectively.

Wireless Station, Matara.—

Control Measures.—

Anti-larval.—In the above area there was a concentration of 85 abandoned brick pits which bred Anopheles Culicifacies. Oiling was undertaken prior to the gradual elimination by filling, fish were introduced into 60 wells in the area, and 54 pits filled during the year.

Spraying of houses by insecticide was undertaken.

(v.) **Irrigation and Colonization Schemes.**—The following schemes have received aid from the malaria point of view—Minneriya, Ridi-bendi-ela, Minipe-ela, Elahera, and Topawewa.

(a) *Minneriya.*—Malaria field work has kept pace with the land development programme. Treatment facilities have been extended by the establishment of a branch dispensary. Oiling, Paris Green distribution and filling were carried out at costs of Rs. 844 and Rs. 2,403 for oil and Paris Green work.

(b) *Ridi-bendi-ela.*—Control measures were oiling and de-insectization and the total cost of the work, including labour, was Rs. 1,060.

(c) *Minipe-ela.*—Oiling and de-insectization were done throughout the year by a labour force of 1 kangany and 4 labourers.

(d) *Elahera.*—Oiling was the chief measure adopted while de-insectization was done for a short period. The average monthly expenditure was Rs. 100, wages accounting for Rs. 60.

(e) *Topawewa Scheme.*—Malaria control measures were started in May, 1939, and comprised of oiling and de-insectization. The cost of oil work amounted to nearly Rs. 1,200 for the period May to December.

(vi.) **General Campaign throughout the Island.**—The following statement will show the amount of work done under the malaria control and health schemes :—

Investigation of Breeding places of Mosquitoes.

	Surveyed.	Number.		
		With Anopheline Larvae.	Dealt with temporarily.	Dealt with permanently.
<i>Artificial</i> —				
Borrow pits	.. 27,519	.. 3,681	.. 7,232	.. 8,379
Quarries ..	.. 1,383	.. 162	.. 470	.. 110
Wells ..	.. 29,223	.. 2,495	.. 3,976	.. 975
Drains ..	.. 5,150	.. 521	.. 1,494	.. 487
Irrigation Channels	.. 2,040	.. 383	.. 261	.. 57
Coconut Trenches	.. 9,483	.. 1,143	.. 1,410	.. 4,747
Paddy fields	.. 4,784	.. 632	.. 1,282	.. 324
<i>Natural</i> —				
Streams ..	.. 2,902	.. 538	.. 529	.. 58
Sandpools ..	.. 11,785	.. 3,247	.. 6,988	.. 679
Rockpools ..	.. 11,900	.. 5,647	.. 8,294	.. 245
Natural depressions	.. 6,063	.. 534	.. 1,148	.. 937
Swamps ..	.. 3,550	.. 225	.. 2,333	.. 440
Marshes ..	.. 1,004	.. 70	.. 202	.. 114

(vii.) **Entomological Work.**—For particulars in regard to work on Malaria Observation Stations, &c., please see page 30.

(viii.) **Malaria Engineering.**—For particulars in regard to river control permanent works at Anti-Malaria Campaign Centres, please see page 18.

(ix.) **Training in Malaria Control.**—The establishment of a Field Training Centre in Malaria Control was felt very much and this wish was realized in December, 1939, when a well-equipped Training Centre was established at Kurunegala.

The personnel consists of two senior officers with special training in Malariology both in Ceylon and abroad, with a full complement of laboratory technicians and field staff. The officers in charge are Dr. S. Rajendram (M.O.H.) and Dr. P. L. F. de Livera (Medical Assistant in Entomology).

The work undertaken at this Field Laboratory consists of (a) training, (b) research, and (c) malaria control in Kurunegala town.

Training.—It is proposed that all future medical officers undertaking health work will spend 6 weeks on a course of lectures in Malariology and field work.

Research.—Lines of practical value have been considered relative to the control of Anopheles Culicifacies in wells, river-beds, paddy fields, &c. Investigations on insecticides and their field application form a special phase of study. Selected areas of control demonstration have also been incorporated in the programme of activities.

Training Classes held in Colombo during 1939.—A full course of lectures was given to Sanitary Assistants on malaria epidemiology, control, entomology and engineering by officers attached to the central laboratories.

(x.) General Remarks.—

(a) *Departmental Committee on Malaria.*—Eleven meetings were held during the year 1939.

(b) *Propaganda.*—It is possible to give a very brief outline of the various measures adopted. In view of the success of the Malaria Day held in 1938, an Island-wide Malaria Week was held from July 22-28, 1939. The week was marked by a central Health Exhibition in Colombo and Exhibitions, Health Plays and Carols in various parts of the Island. Radio Talks on Malaria were given in English, Sinhalese and Tamil. Further, demonstrations of the various phases of malaria control work in the Island were given at the Medical Laboratories for members of Government Constructional Departments.

The newly constructed Health Demonstration Van toured the Western, Sabaragamuwa, and Southern Provinces, while the Health Demonstration Cart continued its tour of the remoter villages in the North-Western Province.

Two courses of lecture demonstrations on Malaria were held for the benefit of the members of Government Constructional Departments. Irrigation Learners and members of the Government Railway Department attended the course.

(c) *Contributions by Local Bodies towards Malaria Control.*—In the early part of the year, the Commissioner of Local Government, upon the advice of the Director of Medical and Sanitary Services, addressed all local bodies on the subject of malaria control works in their areas. Among the points laid down were (a) the Urban Councils should make an annual contribution towards the maintenance of works already completed and under construction within their own limits, the amount of such contribution being arranged between the Director of Medical and Sanitary Services and Commissioner of Local Government, (b) the Commissioner of Local Government should ascertain from Urban Councils in whose areas malaria was a problem whether they desired the establishment of malaria control measures on the condition that the Malaria Regulations would be enforced and the strict adherence to the Circulars issued by the Department of Medical and Sanitary Services in relation to breeding places created by various Constructional Departments.

Co-operation has been assured by certain Urban Councils and contributions have been given in certain cases.

(d) *Visitors.*—The following visitors were shown round field and laboratory work during 1939:—

Dr. J. W. McArthur, Malaria Research Officer, North Borneo. Drs. Ross, Bair, and Mr. Savery of the Rhodesian Medical Research Unit, and Dr. P. K. Nair of the Medical Services, Travancore, India.

(2) Dengue.

Thirteen cases of Dengue were treated during 1939.

(3) Filariasis.

During 1939, there were 125 cases with no deaths.

The Filariasis Survey begun on April 1, 1937, was completed in March, 1939.

Control Work over the Island.—The interest of all Revenue Officers, Headmen, and Village Committee Members has been aroused by propaganda work; with their co-operation the Medical Officers of Health and Field Medical Officers are getting Pistia plants removed from water-courses.

Demonstration Work at Bandara Coswatta.—This is still proceeding. In this connection please see Medical Entomologist's report on Filariasis on page 30.

Treatment.—Centres for treatment exist at Galle and Kurunegala where antimony preparations for intravenous injections are available. Similar arrangements are being made at other hospitals in areas where the disease is prevalent.

Educational Work.—During the year ninety-two demonstrations have been organized in 76 villages showing the breeding of the Mansonia mosquitoes on the leaves of the Pistia plant. Ten health leagues have been formed for the eradication of the Pistia plant. Forty-two lectures with lantern slides and 80 lectures without lantern slides have been given. The Department provided 4 sets of slides for the purpose of the lectures. A poster showing the cause, spread, and prevention of Filariasis has been prepared and made available and also pamphlets in English, Sinhalese, and Tamil.

Legislation.—See page 4.

(b) HELMINTHIC DISEASES—ANKYLOSTOMIASIS.

2,169,931 treatments were given by all agencies during 1939.

The personnel of the campaign was as follows:—1 Superintendent, 2 Clerks, 5 Microscopists, 2 Laboratory Attendants, 1 Peon, and 31 Dispensers.

Eighty-eight Sanitary Assistants, 21 Public Health Nurses, and 131 Estate Dispensers were issued certificates of competency in Hookworm treatment during the year under review.

The following tables give the statistics with regard to treatment given:—

TABLE I.

Ankylostomiasis Treatments by all Agencies in 1939 and 1938.

Agencies	Treatments 1939.			1938
	First.	Subsequent.	Total.	Total.
Government Institutions :				
(1) At institutions ..	1,277,109	..	38,785 ..	1,315,894 ..
(2) Outside institutions ..	75,638	..	2,070 ..	77,708 ..
Campaign Staff :				
(1) School children ..	138,018	..	— ..	138,018 ..
(2) Estate Labourers ..	283,760	..	— ..	283,760 ..
(3) Villagers ..	69,004	..	— ..	69,004 ..
Health Units ..	68,000	..	— ..	68,000 ..
Do.* ..	33,003	..	— ..	33,003 ..
Mandapam Camp ..	26,319	..	— ..	26,319 ..
Estate Medical Staff ..	82,943	..	17,778 ..	100,721 ..
Total ..	2,053,794		58,633	2,112,427
				2,169,931

* Treatments administered under the supervision of Medical Officers of Health of Padukka, Horana, and Moratuwa in their areas, were not included in the figures for Health Units in previous years.

TABLE II.

Ankylostomiasis Treatments given by all Agencies, and Average Egg-count per c.c. per Person and Percentage infected before and after Treatment, by Provinces, for the year 1939.

Province.	Microscopical Examinations by Stoll's method only											
	Treatments.			Before treatment.				After treatment.				
	First.	Subsequent.	Total.	Number examined.	Average egg-count.	Percentage infected.	Number examined.	Average egg-count.	Percentage infected.	Number examined.	Average egg-count.	Percentage infected.
North-Western ..	282,882 ..	8,200 ..	291,082 ..	2,106 ..	1,800 ..	86.6 ..	544 ..	900 ..	0.3 ..			
Eastern ..	95,975 ..	2,608 ..	98,583 ..	947 ..	2,000 ..	83.8 ..	47 ..	600 ..	68.1 ..			
Western ..	453,052 ..	10,247 ..	463,299 ..	3,232 ..	1,500 ..	78.9 ..	1,002 ..	700 ..	58.6 ..			
Southern ..	226,290 ..	9,701 ..	235,991 ..	1,774 ..	1,000 ..	75.5 ..	110 ..	800 ..	52.7 ..			
Central ..	392,855 ..	17,984 ..	410,839 ..	474 ..	1,100 ..	74.5 ..	— ..	— ..	— ..			
Northern ..	91,387 ..	1,119 ..	92,506 ..	35 ..	900 ..	54.3 ..	15 ..	100 ..	33.3 ..			
Sabaragamuwa ..	282,115 ..	5,805 ..	287,920 ..	— ..	— ..	— ..	— ..	— ..	— ..			
Uva ..	151,770 ..	2,473 ..	154,243 ..	— ..	— ..	— ..	— ..	— ..	— ..			
North-Central ..	51,149 ..	496 ..	51,645 ..	— ..	— ..	— ..	— ..	— ..	— ..			
Mandapam Camp ..	26,319 ..	— ..	26,319 ..	— ..	— ..	— ..	— ..	— ..	— ..			
Total for 1939 ..	2,053,794	58,633	2,112,427	8,568	1,500	80.3	1,718	800	58.8			
Total for 1938 ..	2,100,598	69,333	2,169,931	17,975	1,300	75.5	5,163 ..	900	61.4			

TABLE III.

Intestinal Parasites found in the Course of Microscopical Examinations during 1939.

	Before treatment. After treatment.				Multiple Parasitic Infestation.	
	Percent-		Percent-			
	Number.	age	Number.	age.		
Specimens examined ..	17,789 ..	— ..	2,331 ..	— ..	Before Treatment.	
Infected with hookworms ..	13,194 ..	74.2 ..	1,377 ..	59.1 ..	After Treatment.	
Infected with round worms ..	10,255 ..	57.6 ..	1,126 ..	48.3 ..	Harbouring no parasites ..	
Infected with whip worms ..	9,404 ..	52.9 ..	819 ..	35.1 ..	With one kind of parasite ..	
Infected with thread worms ..	320 ..	1.8 ..	16 ..	.7 ..	With two kinds of parasite ..	
Infected with tape worms ..	5 ..	.03 ..	— ..	— ..	With three kinds of parasite ..	
Total examined before and after treatment ..	20,120 ..	— ..	— ..	— ..	With four kinds of parasite ..	
					Total infected with some kind of parasite ..	
					15,888 ..	
					1,893 ..	

(c) VACCINATION.

The reorganization of vaccination work which was described in last year's report made satisfactory progress leading to better supervision.

During the year the Vaccinators in Colombo, by arrangement with the Municipality, made the Municipal dispensaries their centres of work.

128 Sanitary Assistants secured their certificates of competency in vaccination making a total of 180 up to date. With the retirement of 2 Inspectors of Vaccination and 16 Vaccinators their posts were suppressed. There is only 1 Inspector of Vaccination left.

The Department maintains an establishment for the preparation of calf lymph.

The following table gives the number of births, vaccinations, and their results by provinces :—

Province.	Primary.					Re-vaccination.				
	1938 Birth.	Total Vaccinated.	Successful.	Unsuccessful.	Results unknown.	Total.	Successful.	Unsuccessful.	Results unknown.	
1. Western	.. 47,976 ..	32,231 ..	28,164 ..	573 ..	3,494 ..	637 ..	78 ..	36 ..	523 ..	
2. Central	.. 40,676 ..	30,560 ..	28,655 ..	774 ..	1,131 ..	215 ..	68 ..	31 ..	116 ..	
3. Southern	.. 32,095 ..	22,594 ..	18,770 ..	725 ..	3,099 ..	269 ..	84 ..	47 ..	138 ..	
4. Sabaragamuwa	.. 24,524 ..	18,832 ..	14,090 ..	328 ..	4,414 ..	27 ..	13 ..	12 ..	2 ..	
5. North-Western	.. 20,661 ..	12,368 ..	9,391 ..	538 ..	2,439 ..	7 ..	1 ..	6 ..	— ..	
6. Northern	.. 15,100 ..	12,070 ..	9,501 ..	1,208 ..	1,361 ..	670 ..	70 ..	24 ..	576 ..	
7. Uva	.. 14,028 ..	10,710 ..	9,573 ..	60 ..	1,077 ..	— ..	— ..	— ..	— ..	
8. Eastern	.. 9,196 ..	5,950 ..	5,337 ..	299 ..	314 ..	56 ..	55 ..	— ..	1 ..	
9. North-Central	.. 4,134 ..	4,198 ..	3,787 ..	64 ..	347 ..	175 ..	151 ..	19 ..	5 ..	
Total	.. 208,390 ..	149,513 ..	127,268 ..	4,569 ..	17,676 ..	2,056 ..	520 ..	175 ..	1,361 ..	

It will be noted that 71.7 per cent. of the births of 1938 have been vaccinated and of those inspected 96.5 per cent. are known to have been successful. 12 per cent. of those vaccinated were not inspected.

2.—GENERAL MEASURES OF SANITATION.

Water Supply.—The water supply is commonly from wells both in urban and rural areas, 39 towns are provided with pipe borne supplies. The people in rural areas are inadequately provided with protected water, and the aim of the Department is to provide each hamlet with a protected well.

The routine work of the Department in regard to water supplies has been to get existing wells protected from pollution and to see that new wells are constructed according to departmental specifications.

The following is a statement in regard to wells and springs :—

	Public wells.	Private wells.	Springs.
Existing	.. 2,626 ..	179,425 ..	1,886 ..
Defective	.. 1,615 ..	88,753 ..	619 ..
Protected during the year—			
Partially	.. 144 ..	2,907 ..	47 ..
Radically	.. 101 ..	712 ..	26 ..
Newly built	.. 57 ..	673 ..	— ..
Inspections done	..	231,611	

The Department carries out the bacteriological examination of water and collects water for chemical examination which is carried out by the Government Analyst.

Samples taken for bacteriological examination	..	..	68
No. found unfit for human consumption	..	..	5
Samples taken for chemical examination	..	..	71
No. found unfit	..	..	15

Disposal of Excreta.—In urban areas the bucket latrine is in vogue with disposal of night soil by trenching. In rural areas the following types of pit latrines, viz., the deep pit, bored hole, and the mound are being constructed. In a few localities disposal is by composting while in one place it is by incineration.

In parts of Panadure and Kalutara totamunes where the subsoil water is high, the water seal plate for pit latrines is being experimented on. The work done at Kalutara totamune has given satisfactory results, there being no smell or breeding of mosquitoes or flies.

The number of latrines constructed for the year has dropped owing to outbreaks of malaria and to the high cost of materials used for squatting plates due to war conditions.

Five Urban Councils have undertaken aided schemes of latrine construction for poor people.

Details of work done during the year. Total number of newly constructed latrines is 25,787. The following is a statement of the above showing various types :—

	Pail.	Deep Pit.	Bored Hole.	Mound.
Public	..	50 ..	13 ..	1 ..
Private	..	4,894 ..	20,131 ..	62 ..
School	..	140 ..	377 ..	4 ..

Sixty-four public latrines were built :—20 by Urban Councils, 21 by Sanitary Boards, and 23 by Village Committees. Latrines restored to sanitary type :—

	Pail.	Deep Pit.	Bored Hole.	Mound.
Public	..	31 ..	7 ..	— ..
Private	..	518 ..	446 ..	18 ..
School	..	34 ..	23 ..	— ..

The following is a statement of towns and their mode of disposal of night soil* :—

	Urban Councils.	Sanitary Boards, Local Board, and Board of Health.
By trenching	..	24 ..
By composting	..	5 ..
By incineration	..	— ..

* Some towns adopt more than one method.

Concrete Squatting Plates.—12,210 plates were made and 8,225 were sold.

Scavenging and Disposal of Refuse.—Disposal of refuse is by dumping, incineration, burial, composting and by filling up of low-lying land.

The following is a statement of the mode of disposal of refuse in towns :—

	U. C. Towns.	S. B. Towns, Board of Health, and Local Board.
Composting	..	5 ..
Burying in trenches	..	6 ..
Incineration by incinerator	..	6 ..
Dumping	..	13 ..
Burning	..	1 ..

* Some towns adopt more than one method.

Drainage.—There were 27 Urban Council and 91 Sanitary Board towns; in all these towns the need for adequate drainage is keenly felt. Urban Councils like Weligama, Matara, Chilaw, Jaffna, and Negombo present difficulties for efficient drainage owing to the land being below sea level in some parts. Plans have been prepared for nine towns but owing to the high cost of construction the work has not been put in hand.

The following is a statement of surface cement drains in towns and bazaar areas :—

	Urban Council.	Sanitary Board.	Bazaar Areas.
<i>Front drains.</i>			
Completely provided in	..	2 ..	19 ..
Partially provided in	..	25 ..	69 ..
Not provided at all in	..	— ..	11 ..
<i>Back drains.</i>			
Completely provided in	..	2 ..	15 ..
Partially provided in	..	15 ..	13 ..
Not provided at all in	..	10 ..	63 ..

The following is a statement of drains in feet constructed during 1939 according to towns and bazaar areas :—

	Urban Council.	In Sanitary Board.	Bazaar Areas.
Front drains	..	4,575 ..	32,809 ..
Back drains	..	1,601 ..	1,338 ..
Back drains associated with pavement	..	— ..	796 ..

Licensed Trades.—The following is a statement of inspections made and action taken on licensed premises other than food handling establishments:—

Offensive Trade.		Existing.	Inspected.	Inspections.	Nuisances created.	Nuisances abated.
Desiccating mills	..	62	..	53	..	517
Fibre dyeing	..	6	..	5	..	46
Fibre mills	..	167	..	144	..	966
Hide stores	..	28	..	20	..	424
Kilns—brick	..	349	..	290	..	1,218
Kilns—lime	..	209	..	155	..	1,861
Kraals—coconut husk	..	1,964	..	762	..	1,241
Kraals—fishing	..	51	..	46	..	154
Manure—stores	..	41	..	41	..	579
Plumbago—sheds	..	52	..	49	..	219
Quarries—cabook	..	43	..	41	..	216
Metal	..	283	..	206	..	1,246

Other Licensed Premises.		Existing.	Inspected.	Inspections.	Defective.	Defects corrected.	Radically improved.
Aerated water manufactories	43	..	42	..	748	..	548
Bakeries	..	1,114	..	1,092	..	17,927	..
Dairies	..	688	..	316	..	10,805	..
Eating houses	..	1,309	..	1,211	..	21,648	..
Galas—cattle sheds	..	173	..	171	..	3,609	..
Laundries	..	503	..	455	..	4,385	..
Lodging houses	..	76	..	76	..	1,946	..
Soap manufactories	..	33	..	33	..	259	..
Stalls—fish	..	421	..	420	..	38,106	..
Stalls—meat	..	636	..	612	..	31,454	..
Stalls—vegetables	..	950	..	950	..	67,459	..
Tea and coffee boutiques	..	6,152	..	5,903	..	63,792	..

Anti-plague Measures.—Intensive anti-plague measures continue to be carried out in most of the towns. Colombo has been free from plague since August, 1938, and no case of plague has been reported from any part of the Island for 1939. In the absence of calcium cyanide briquettes, cyanogas was used for fumigation.

The following is a statement of the work done in this connection:—

Commercial premises existing	..	..	..	15,274
Premises inspected for rat holes	..	..	..	14,363
Rat holes found	..	..	..	84,753
Rat holes blocked	..	..	..	79,593
Premises fumigated	..	..	..	5,201
Number of rats caught	..	..	..	119,844
Number of rats examined	..	..	..	3,316
Number found infected	..	..	..	Nil
Premises provided with rat-proof bins	..	..	..	1,130
Number of grain stores newly built	..	..	..	79
Number of grain stores existing at end of year	..	..	..	215

Anti-fly measures.—Fly nuisance has been reduced to a certain extent. 53,320 out of the 58,535 breeding places of flies detected were dealt with.

Special investigations have been carried out at Hambantota, Weligama and Matara.

Sanitary Inspections.—The inspection of private premises forms one of the routine duties of Sanitary Assistants. In rural areas, the following measures are carried out under the rural sanitation scheme with regard to private premises viz., the provision of—

- (a) A latrine for each house.
- (b) Windows for houses.
- (c) Kitchen garden.
- (d) Manure pit.
- (e) Boiled water for drinking.

The following is a statement of work done:—

- (a) *Private Premises.*—Out of 824,140 private premises, 57,553 were inspected and received 1,260,585 inspections. 646,570 defects were detected of which 494,098 were remedied.

(b) The following is a statement of work done in Railway premises:—

		Inspected.	Inspections.	Defects.	Defects corrected.
1. Stations—					
Premises	..	223	..	4,934	..
Drains	..	218	..	3,289	..
Latrines	..	389	..	5,497	..
Urinals	..	234	..	3,581	..
Water supplies	..	144	..	2,299	..
				1,032	..
				888	..
				1,292	..
				671	..
				2,397	..
				368	
2. Bungalows—					
Premises	..	762	..	6,671	..
Drains	..	718	..	8,806	..
Latrines	..	1,450	..	9,743	..
Compounds	..	746	..	8,728	..
Water supplies	..	343	..	4,336	..
				1,304	..
				1,175	..
				1,242	..
				499	..
				369	
3. Lines.—					
Premises	..	494	..	9,171	..
Drains	..	942	..	7,077	..
Latrines	..	579	..	7,287	..
Compounds	..	547	..	7,792	..
Water supplies	..	206	..	2,583	..
				1,644	..
				1,765	..
				1,830	..
				2,400	..
				400	..
				256	

3.—SCHOOL HEALTH WORK.

Schools and School Population.—

Total number of registered schools	..	..	6,100
Total number of pupils	..	..	828,090
Number of schools doing health work	..	..	3,433
Number of pupils	..	..	592,724
		Number of Schools.	Number of Scholars.
Primary	..	..	910 .. 116,375
Junior secondary	..	..	2,125 .. 361,924
Senior secondary	..	..	310 .. 90,720
Collegiate	..	..	85 .. 23,599
Training	..	..	2 .. 74
Industrial	..	..	1 .. 32
Boys	..	..	582 } 351,931
Girls	..	..	556 } 240,793
Mixed	..	..	2,295 ..
Government	..	..	1,462 .. 246,211
Government aided	..	..	1,861 .. 334,713
Unaided	..	..	110 .. 11,800

Visits to Schools for Medical Examination.—

Number of Schools Visited.	Number of Visits Paid.	Average per School.
1,255 ..	1,717 ..	1.3

Activities carried out.—

(1) Medical Inspection of School Children—

(a) Total number of scholars examined	..	..	69,204
Total number of boys examined	..	..	42,328
Total number of girls examined	..	..	26,876

(b) Total number examined—

Primary schools	..	..	12,926
Junior secondary schools	..	..	40,811
Senior secondary schools	..	..	12,999
Collegiate schools	..	..	2,453
Training schools	..	..	15

(2) Schools visited for medical inspection of children

Number of scholars examined	..	..	69,204
Number of scholars given 1st examination	..	..	59,057
Number of scholars given 2nd examination	..	..	8,483
Number of scholars given 3rd examination	..	..	1,396
Number of scholars given special examination	..	..	268
Number of scholars defective	..	..	54,882
Percentage defective	..	..	79.3
Number of defects	..	..	130,174
Average number of defects per defective child	..	..	2.4

(3) *Return of Defects*—

Nature of Defect.	Found.	Percentage to Total found.	Corrected.	Percentage Corrected.
Malnutrition	14,831	11·39	4,326	29·1
Uncleanliness	7,642	5·87	3,153	41·26
Unvaccinated	4,393	3·37	2,095	47·69
Eyes	1,575	1·21	158	10·03
Ears	1,359	1·04	490	36·06
Defective vision	1,237	·95	135	10·91
Defective hearing	86	·07	14	16·26
Enlarged glands	2,742	2·11	850	30·99
Enlarged spleen	3,188	2·49	1,295	40·32
Lymph glands	408	·31	227	55·64
Dental caries	3,694	2·84	1,064	28·8
Teeth and gums	14,973	11·5	4,410	29·45
Nose	742	·57	301	40·51
Adenoids and tonsils	6,158	4·73	1,452	23·58
Anaemia	11,992	9·21	4,530	37·78
Heart	233	·18	38	16·31
Lungs	120	·09	36	30·0
Hernia	76	·05	—	—
Orthopaedic	409	·31	14	3·42
Nervous system	89	·07	14	15·73
Rickets	35	·03	4	11·43
Skin	2,443	1·88	674	27·59
Scalp	282	·22	79	28·01
Hookworm	25,565	19·64	11,437	44·74
Malaria	8,269	6·35	2,908	30·52
Abnormal behaviour	26	·02	—	—
Mental deficiency	349	·26	1	·29
Speech	303	·23	63	20·79
Scabies	2,560	1·97	1,138	44·45
Pediculosis	9,030	6·94	4,146	45·91
Ringworm	1,408	1·08	89	6·32
Other defects	3,597	3·04	1,007	25·45
Total	130,174		46,148	35·45

(4) *Dental Work*—(a) *Dental Van*.

	Adults.	Children.
Total number of new patients treated	1,881	4,993
Extraction	1,454	3,157
Scaling	351	1,637
Dressing	73	143

Places visited by the Van.—During the year the van visited Panadure, Kalutara, Jaffna, Nuwara Eliya, Nattandiya, Nawalapitiya, Kegalla, Kurunegala, Horana, Trincomalee, Chilaw, Ragama, Pannala, and Ambalangoda.

(b) *At School Dental Clinics*.

	Number Treated.	Extractions.	Fillings.	Dressings.	Cleanings.
St. Peter's College, Colombo	853	78	285	11	231
Good Shepherd Convent, Colombo	316	53	169	73	53
Zahira College, Colombo	241	39	66	31	103
Milagiriya St. Paul's School	453	91	409	2	9
St. Thomas' College	(not available)				
Ampitiya English School, Kandy	318	140	533	10	33

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These dental clinics were organized and conducted by the schools concerned.

(c) *At the Dental Institute*.

6,631 school children were treated at the School Clinic of this Institute.

(5) <i>Mid-day meals in the Provinces at Government expense—</i>									
W.P.	N.P.	C.P.	E.P.	N.-C.P.	Uva.	Sab.	S.P.	N.-W.P.	Total.
222 ..	196 ..	124 ..	34 ..	28 ..	6 ..	165 ..	188 ..	322 ..	1,285
(6) <i>Correction of defects at Schools Clinics—</i>									
Number of centres	..				..		..		547
Number of clinics	..				..		..		1,608
Number of defects corrected	..				..		..		33,968
(7) <i>Sanitation—</i>									
Total number of schools visited for sanitation	..				..		..		3,459
Total number of schools children	..				..		..		631,824
Total seats	..	..			..		..		7,312
Schools with urinals	..				..		..		687
Total urinal compartments	..				..		..		1,800
Number with protected wells	..				..		..		1,442
(8) <i>Health Education—</i>									
Number of training classes for teachers commenced	..				..		..		65
Number of training classes for teachers completed	..				..		..		22
Number of teachers instructed ..					..		..		1,023
(9) <i>Routine health education procedures—</i>								Number of Schools Carrying them out.	
<i>Items.</i>									
1. Daily morning inspection ..					..		..		2,982
2. Scoring of health habit booklet ..					..		..		1,637
3. Weighing and measuring ..					..		..		1,495
4. Use of handkerchief ..					..		..		1,216
5. Proper storage of drinking water ..					..		..		1,617
6. Use of individual drinking cups ..					..		..		1,300
7. Pupil participation in the maintenance of sanitary facilities ..					..		..		2,199
8. Midday meal ..					..		..		1,285
9. Health clubs ..					..		..		186
10. Organized play and games ..					..		..		2,295
11. Use of first-aid cabinet ..					..		..		1,005
<i>Health Instruction.</i>									
1. Direct teaching ..					..		..		2,513
2. Teaching by correlation ..					..		..		1,737
3. Posters, scrap books, health magazines, &c. ..					..		..		1,406
4. Dramatization ..					..		..		653
5. Health songs and debates ..					..		..		657
6. Field visits ..					..		..		987
<i>Other Activities.</i>									
1. Parent Teachers' Association ..					..		..		847
2. Parents' Days ..					..		..		462
3. School Health Demonstrations ..					..		..		399
4. Health Museum ..					..		..		84
5. Maintenance of health diary by teachers ..					..		..		476
(10) <i>Control of Communicable Diseases—</i>									
Chickenpox ..					..		..		1,175
Diphtheria ..					..		..		14
Dysentery ..					..		..		216
Enteric ..					..		..		166
Measles ..					..		..		757
Mumps ..					..		..		535
Phthisis ..					..		..		6
Whooping cough ..					..		..		401
Number of schools closed on account of infectious diseases ..					..		..		28
Number of schools in which routine reporting of infectious disease of children absent from school for over three days on account of illness has been set up and is being carried out..					..		..		1,320
(11) <i>Quinine Administration—</i>									
Number of schools in which prophylactic quinine was administered ..					..		..		1,427
Number of scholars given quinine ..					..		..		292,520
(12) <i>Hookworm Treatment—</i>									
Number of schools in which hookworm treatment was given ..					..		..		2,477
Number of scholars given treatment ..					..		..		199,792
(13) <i>Anti-typhoid Inoculations given—</i>									
Number of first ..					..		..		28,540
Number of second ..					..		..		22,924
<i>Anti-Smallpox Vaccination—</i>									
Primary ..					..		..		11,788
Secondary ..					..		..		553

4.—LABOUR CONDITIONS.

Area and Population.—The number of scheduled estates and the cultivated area were approximately the same as last year. The Indian Immigrant population in estates was also about the same, numbering about 678,000.

Staff and Reorganization of Work.—The staff was the same as it was in the previous year up to September, 1939. From the beginning of October, 1939, the work of Estate Medical Inspection was completely reorganized. The three Inspecting Medical Officers and one Assisting Medical Officer ceased to function as such and the work of inspection was entrusted to the Medical Officers of Health and Field Medical Officers already stationed in and working in the Estates Medical Districts. One Assistant Inspecting Medical Officer stationed at Nuwara Eliya was put in charge of estates in which there was no Medical Officer of Health or Field Medical Officer working. Apart from the inspection of estates for the purposes of sanitation and rebate, the services of the officers were made available to the estates for the following :—

- (a) Treatment for Ankylostomiasis
- (b) Vaccination against Small-pox.
- (c) Anti-typhoid inoculations.
- (d) Attention to Infectious Diseases, regarding investigation, isolation and prevention of spread of infection.
- (e) Advice and, where possible, help in the organization of maternity and child welfare work on the estates.
- (f) Assistance in getting latrines built according to departmental type plans.
- (g) Assistance in carrying out health propaganda and education including health education in estate schools.
- (h) Supervision of the work of Estate Dispensers and Estate Midwives.
- (i) Advice generally on health matters.

Vital Statistics on Estates.—The infant death rates of the different estate districts for the last five years are given below :—

	1935.	1936.	1937.	1938.	1939.
Kandy	.. 204	.. 191	.. 182	.. 181	.. 180
Matale	.. 270	.. 145	.. 152	.. 159	.. 154
Nuwara Eliya	.. 202	.. 204	.. 209	.. 194	.. 192
Badulla	.. 171	.. 156	.. 149	.. 171	.. 153
Ratnapura	.. 157	.. 132	.. 140	.. 142	.. 151
Kegalla	.. 251	.. 103	.. 109	.. 137	.. 141
Colombo	.. 211	.. 128	.. 151	.. 150	.. 150
Kalutara	.. 135	.. 115	.. 142	.. 129	.. 113
Galle	.. 135	.. 117	.. 124	.. 103	.. 117
Matara	.. 245	.. 224	.. 163	.. 145	.. 244
Kurunegala	.. 740	.. 184	.. 197	.. 165	.. 196
All Estate Districts	.. 198	.. 172	.. 169	.. 171	.. 169

Medical Aid.—The Government maintains 64 District hospitals and 111 dispensaries in charge of qualified officers and Apothecaries. In addition to hospitals and dispensaries run by Government there were 96 estate hospitals and 670 estate dispensaries which served labourers employed in estates.

Estate Hospitals.—During the year 96 hospitals were inspected as against 93 in the previous year.

Estate Dispensaries.—Number of Estate Dispensaries in the Island 670. Of these number inspected in 1939, 298.

Medical Attendants.—The following gives the qualifications of the officers in charge of the estate hospitals and dispensaries :—

(a) Qualified Medical Officers	..	..	..	4
(b) Indian qualified (but not registrable in Ceylon)	..	..	..	7
(c) Qualified Apothecaries	..	..	..	8
(d) "Approved" Dispensers	..	..	..	575

Sanitary Inspections.—The total number of estates inspected during the year was 566 as against 696 in 1938 and 506 in 1937.

General Sanitary Conditions of Estates.—The general sanitary condition of the estates inspected was as follows :—

	1937.		1938.		1939.	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Very good	.. 31	.. 6·1	.. 75	.. 10·8	.. 49	.. 8·7
good	.. 294	.. 58·1	.. 306	.. 43·9	.. 282	.. 49·8
Very fair	.. 72	.. 14·2	.. 116	.. 16·6	.. 54	.. 9·5
fair	.. 71	.. 14·0	.. 146	.. 20·9	.. 136	.. 24·0
poor	.. 22	.. 4·3	.. 27	.. 3·9	.. 29	.. 5·1
bad	.. 16	.. 3·1	.. 26	.. 3·8	.. 16	.. 2·8
Total	.. 506	.. —	.. 696	.. —	.. 566	.. —

Line Accommodation and Construction.—

	1937.		1938.		1939.	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
1. (a) Un-overcrowded lines ..	467	..	92·3	..	652	..
(b) Slightly overcrowded lines ..	16	..	3·2	..	25	..
(c) Overcrowded lines ..	23	..	4·5	..	19	..
Total ..	506	—	696	—	566	—

	1937.		1938.		1939.	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
2. (a) No. of rooms inspected ..	79,467	..	107,543	..	82,655	
(b) No. of these up to requirements ..	59,067	..	82,678	..	66,801	
(c) No. of these not up to requirements ..	74·3%	..	76·9%	..	80·8%	
	20,400	..	24,865	..	15,854	
	25·7%	..	23·1%	..	19·2%	

Water Supply.—Of the estates inspected in 1939 number having:—

(a) Entirely protected supplies ..	..	..	..	450
(b) Partly protected supplies ..	..	..	..	79
(c) Unprotected supplies ..	..	..	..	37

Latrine Accommodation.—In the estates inspected in 1939 number of latrine compartments:—

(a) Found ..	..	..	..	30,091
(b) Further required ..	..	..	..	843

Of the estates inspected in 1939 number having :—

(a) Sufficient number of latrines ..	..	..	..	487
(b) Insufficient number of latrines ..	..	..	..	62
(c) No latrines ..	..	..	..	17

Ankylostomiasis.—Systematic mass treatment has been carried out on estates. This has been done by Medical Officers of Health and Field Medical Officers in their respective areas. Apart from this, estate dispensers have also carried out individual treatment as a routine measure.

Treatment on Estates.	No. of Estates treated.	No. of Labourers treated.
With the aid of campaign staff ..	.. 990	.. 283,760
Without the aid of campaign staff ..	.. 101	.. 34,358
Total ..	1,091	318,118

Treatment by Estate Staff 100,721
Treatment at Mandapam Camp—

No. of arrivals ..	..	..	..	29,758
No. of persons treated ..	..	..	..	26,390

Maternity and Child Welfare Work—

		1938.	1939.
(a) No. of registered midwives on all estates ..	..	.. 170	.. 191
(b) No. of unregistered midwives on all estates ..	..	.. 53	.. 57
(c) No. of all estates served by registered midwives ..	..	.. 327	.. 407
(d) No. of estates served by unregistered midwives ..	..	.. 64	.. 104
(e) No. of estates having creches ..	..	.. 186	.. 320
(f) Of the estates inspected no. supplying cooked meals to children of non-working age ..	..	.. 368	.. 346
(g) Of the estates inspected no. given maternity benefits according to the private agreement, i.e., $\frac{1}{8}$ bushel rice plus cts. 75 each week for 4 weeks plus Rs. 2 at the end of three months ..	..	.. 150	.. 257
(h) No. of estates provided with maternity wards ..	..	.. 110	.. 133

5.—HOUSING AND TOWN PLANNING.

Housing and town planning schemes are undertaken by the local authorities from grants made to them by the Commissioner of Local Government under whom is a Town Planner.

In the following towns housing schemes have been undertaken: Badulla (16 dwellings), Dehiwala-Mt. Lavinia (20 dwellings), Jaffna (18 dwellings), Hatton (10 dwellings), Kalutara (18 dwellings), Kurunegala (16 dwellings), Moratuwa (24 dwellings), Kotte (45 dwellings), and Dondra (6 dwellings).

For further particulars reference may be made to the Administration Report of the Commissioner of Local Government.

The following is a statement of work done in connection with the enforcement of the requirements of the Ordinance:—

Applications for—

New Buildings—

Number received ..	..	..	..	3,900
Number reported on ..	..	..	..	3,864

Alterations and Additions—

Number received ..	..	..	..	1,723
Number reported on ..	..	..	..	1,682

Certificates of Conformity—

No. received ..	..	..	..	1,788
No. reported on ..	..	..	..	1,718

Insanitary Dwellings—

No. reported on ..	..	..	..	180
Closing orders obtained ..	..	..	..	111
Improved—Voluntarily ..	..	..	..	151
—Compulsorily ..	..	..	..	48
Demolition orders obtained ..	..	..	..	31
Demolished ..	..	..	..	44

6.—FOOD IN RELATION TO HEALTH AND DISEASE.

Meat Inspection.—75,701 head of cattle were inspected and 69,466 passed for slaughter. Of the 30,176 goats inspected 28,717 were passed as fit for slaughter.

Milk Supply.—Adulteration of milk with water still goes on in spite of the vigilance of the authorities.

There weree 688 licensed dairies. 450 samples of milk were examined, 244 of which were found adulterated.

Food unfit for Human Consumption.—221 cases of food were seized and 204 were condemned as unfit for human consumption.

7.—SANITARY ENGINEERING.

During the period under review the activities in the Sanitary Engineering Division developed to a great extent. River control works expanded, and a considerable number of syphon dams were built. Owing to retrenchment the programme of work was much reduced.

MALARIA CONTROL.

River Training Works.—Owing to the drought, the conditions in river beds were favourable for construction of syphon dams and fixing bamboo groynes. Later, when rains set in, much damage was caused by floods to works in the course of construction.

Syphon Dams.—These were founded on rock foundations and were built on the lines of strictest economy compatible with efficiency. The damage caused by floods has been made good. The dams vary in length from 25 to 150 feet. Forty dams were built.

Rock Pool Sealing and Channeling.—Where possible pools among rocks were drained by removal of boulders and blasting. Some were sealed with cement concrete. 42,250 square feet were dealt with.

Bamboo Groynes.—Groynes consisting of bamboo stakes were fixed in parallel rows on both sides of river beds, with space between inside ends to train flow of river and induce silting at sides. Over 8 miles of river were thus treated.

Sand Pool Filling.—About 770 cubes of sand were used in filling pools in river beds.

Clearing Debris, etc.—About 14 miles of river bed were cleared of fallen trees, logs, and debris.

Check Dams and Rubble Pitching.—21,500 square feet of check dams and 3,600 square feet of hog-wire mattresses were laid in river beds.

Excavation in Scour Drains.—783 cubes were cut in forming drains through islands and shoals in river beds in order to bring about their disintegration.

Tetrahedron Concrete Bloeks.—3,500 of these pyramidal blocks 1 foot on edge, were scattered over river beds over areas which required silting.

Surveys.—60 miles of river were surveyed, and plans and level sections thereof plotted.

EMERGENCY RIVER OILING.

River oiling has increased considerably since 1935 and is being done at 46 centres. It is confined essentially to the wet and intermediate zones of the Island.

WATER SUPPLIES.

Town.—Reports were made by the Sanitary Engineer in connection with 15 sources.

Hospital.—Reports were made on 8 supplies.

Miscellaneous.—Reported on 22 supplies at various Rural Centres.

DRAINAGE.

Hospital.—Reports were made in connection with 5 hospitals.

Town.—Full reports involving 61 sheets of plans were made in connection with the drainage of Alutgama and part of Dehiwela-Mt. Lavinia Urban Council Area.

Miscellaneous.—Numerous reports were drawn up and advice given on diverse questions in connection with sanitation in Rural Centres.

Meetings.—The Sanitary Engineer attended several meetings where questions on sanitary engineering were discussed.

Lectures.—Lectures were delivered by officers of the Sanitary Engineering Division to officers of Constructional Departments on Engineering Aspects of Malaria. Lectures were also given on drainage, water supply, building construction and anti-malaria works to Field Medical Officers and Sanitary Assistants.

Office Work.—166 sheets of levels were plotted, 320 tracings done, 345 prints taken, and 100 maps of rivers were coloured. Numerous drawings were made in connection with river training works, septic tanks, latrines and on matters relating to water supply.

Workshop.—Repairs to anti-malaria equipment were attended to and wooden moulds were constructed for casting cement concrete syphons in river training works. Other miscellaneous work was also undertaken.

B.—MEASURES TAKEN TO SPREAD THE KNOWLEDGE OF HYGIENE AND SANITATION.

Health Education Courses for Teachers.—

No. of classes .. .. .. ..	.. .. .. ..	37
No. of Teachers attending .. .. .. ..	.. .. .. ..	1,025
No. awarded joint Certificate by the Medical Department and Education Department .. .. .. ..	.. .. .. ..	8

Training of Headmen in Health Work.—

No. of centres .. .. .. ..	.. .. .. ..	81
No. in training .. .. .. ..	.. .. .. ..	656
No. passed examination .. .. .. ..	.. .. .. ..	69
No. doing practical work .. .. .. ..	.. .. .. ..	69

Talks and Demonstrations by Staff.—

	Number.	Attendance.
School talks	13,698	654,721
Village talks	34,237	256,458
Clinic talks	7,582	160,508

New Leaflets and Pamphlets issued.—

1. Filariasis.
2. Malaria.
3. Malaria and Convulsions.
4. Instructions for the preparation of Lactogen and Malted Milk.
5. Malaria Week Booklet.

Number of leaflets issued to officers for distribution to the public:—

	English.	Sinhalese.	Tamil.
Care of Expectant Mother	2,874	11,872	4,089
Malaria	14,044	67,825	22,817
Instruction for the preparation milk	—	7,800	—
Rabies	794	—	—
Infantile Convulsions	1,674	11,858	3,530
Bubonic Plague	869	2,625	808
Malaria Week Booklet	5,000	10,000	5,000
Filariasis	9,000	24,750	—
Leaflet on Gonorrhoea	31,894	31,894	31,894
Leaflet on Syphilis	32,684	32,684	32,684
Malaria and Convulsions	—	12,863	—

New Posters Prepared.

- (1) Filariasis .. .
 (2) Malaria and Convulsions in Children
 (3) Malaria and Quinine
 (4) Malaria Week Poster

Press Articles.

.. No. of Communiques ..	24
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Ceylon Health News—

Numbers printed and issued.

Volume 8 ..	No. 2 ..	School Health Work
Volume 8 ..	No. 3 ..	Personal Hygiene
Volume 8 ..	No. 4 ..	Social Hygiene

No. Distributed.

Broadcast Talks.

Lectures and Cinema Shows

English 475 ..	15 English ..	Cinema Shows ..	182
Sinhalese 3,900 ..	16 Sinhalese ..	Lantern Lectures ..	1,725
Tamil 1,150 ..	16 Tamil ..	Lectures ..	2,416

Health Exhibitions.

Conferences.

No.

Number 206 ..	Medical Officers of Health ..	.. 1
Attendance 845,845 ..	Field Medical Officers ..	.. 5
	Public Health Nurses ..	.. 1
	Sanitary Assistants ..	.. 1
	Midwives ..	.. 1

Health Leagues—

Number in existence ..	.. ..	.. ..	.. 329
Number functioning ..	.. ..	.. ..	.. 272

C.—TRAINING OF HEALTH PERSONNEL

Sanitary Assistants (Inspectors).—The training class for Sanitary Assistants which was commenced in September, 1938, was completed in February, 1939. 34 candidates sat for the examination of the Royal Sanitary Institute held in Colombo by the Local Board of examiners and 27 passed. A new class was commenced with 35 students in March and ended about the middle of November, there being an interruption of 2 months in the training during which the students were employed in de-insectization work in connection with the epidemic of malaria. At the examination held at the end of the course 39 candidates sat for it and 32 passed. At the end of the year there were 328 Sanitary Assistants in service.

Public Health Nurses.—No training class for public health nurses was conducted during the year. Two nurses completed their training in midwifery and received their appointments. At the end of the year there were 44 nurses in service.

Midwives.—103 candidates were selected and admitted for training to the Lying-in Home and 64 candidates of the previous year who passed out of the Lying-in Home were assigned for 6 months training at Health Units. 64 finished their training at Health Units during the year.

Post-graduate Training.—Six Medical Officers received a week's training in general health work at the Kalutara Totamune Health Unit and 2 weeks in malaria work at the Torrington Square Medical Laboratories. In addition one Medical Officer from the Bombay Presidency was trained in health unit work.

Two conferences with Field Medical Officers and Medical Officers of Health were held, one at Kurunegala and the other at Kandy.

IV.—PORT HEALTH WORK AND ADMINISTRATION.

Ceylon is guarded against the incidence of dangerous infectious diseases from abroad by the health services at each of its ports and by the two quarantine camps at Mandapam and Tataparai in South India. The chief sources of danger to the Island are (a) the grain traffic from Rangoon and other Burmese ports in respect of plague and (b) the passenger and immigrant labour traffic between South India and Ceylon by the Dhanuskodi-Talaimannar and the Tuticorin-Colombo routes in respect of cholera and smallpox. Preventive measures exist at the airports as well.

The quarantine arrangements and procedure are under the control of the Quarantine Department, the technical work of which is performed by Medical Officers, Medical Officers of Health, Apothecaries, Sanitary Assistants, and Vaccinators of the Medical Department. The Port of Colombo has a whole time staff of 5 Health Officers, one of whom is solely in charge of Indian immigration. There are also a supervisor of the Disinfecting Station and a chief and 4 assistant fumigation inspectors.

At the 15 minor ports the local Medical Officers or Apothecaries give part of their time to the work. The surveillance of travellers after arrival at their destinations in Ceylon is also carried out by Medical Officers of the Department.

A detailed statement of the work carried out at the Colombo Port, Mandapam, and Tataparai Camps and the minor ports appear in the Administration Report of the Director, Quarantine Department for the year 1939.

V.—MATERNITY AND CHILD WELFARE.

Maternity Beds in Hospitals.

Number of maternity beds in hospitals increased from 673 in 1938 to 767 in 1939. The number of maternity cases delivered in hospitals was 16,045.

Maternity Homes.

Five maternity homes with 39 beds were maintained by urban councils. Staff employed consisted of 4 nurses, 5 resident midwives, 3 attendants, and 7 labourers.

Cases admitted ..	..	..	..	738
Cases with ante-natal care ..	..	..	..	651
Cases delivered normally ..	..	..	..	548
Cases that needed medical assistance ..	..	..	..	14
Stillbirths ..	..	..	..	13
Infant deaths ..	..	..	..	1
Maternal deaths ..	..	..	..	Nil

Health Centres and Clinics.

De Soysa Lying-in Home Ante-natal Clinic—

Number of mothers ..	..	..	..	10,559
Number of visits ..	..	..	..	14,669

Post-natal Clinic—

Number of mothers ..	..	..	..	821
Number of visits ..	..	..	..	1,073

The number of Health Centres increased from 311 in 1938 to 408 in 1939. Total number of Clinics held was 16,354 as compared with 9,485 in 1938.

		1939.		1938.
<i>Visits paid—</i>				
Expectant mothers ..	..	100,761	..	76,108
Infants ..	..	224,208	..	157,988
Pre-school children ..	..	98,343	..	75,177

Midwives and their work—

Midwives employed—

Government	278	..	271
Local authorities	339	..	298
Estates	191	..	170

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Work done—

Number of mothers under care	67,007	..	38,448
Number of ante-natal visits	590,516	..	456,302
Number of mothers delivered ..	..	..	39,933	..	33,391
Number of post-natal visits	280,029	..	229,723

Public Health Nurses and their work—

Number of nurses employed ..	36	
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Work done—

Number of mothers under care	56,855	..	38,448
Number of infants under care	66,111	..	28,811
Number of pre-school children ..	..	..	23,209	..	26,374
Number of visits paid to mothers ..	..	..	65,185	..	76,108
Number of visits paid to infants ..	..	..	58,584	..	157,988
Number of visits to pre-school children	45,258	..	75,177

Women Medical Officers—

Number employed ..	5	
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Work in Homes—

Number of homes visited	5,464	..	4,856
Number of confinements attended	206	..	227
Number of puerperal cases attended ..	..	..	544	..	680
Number of sick expectant mothers treated ..	..	..	3,754	..	2,427
Number of sick infants treated ..	..	..	2,938	..	3,109
Number of sick pre-school children treated ..	..	..	8,575	..	5,565

<i>Work at Clinics—</i>			1939.	1938.
Total number of centres	..	..	15	..
Total number of clinics	..	..	1,068	..
Expectant mothers—				
First visits	..	..	2,682	..
Total visits	..	..	8,942	..
Infants—				
First visits	..	..	965	..
Total visits	..	..	9,446	..
Pre-school children—				
First visits	..	..	970	..
Total visits	..	..	7,152	..

Voluntary Associations—

Total number	..	..	85	..	102
Money spent on Maternity and Childwelfare by the associations	..	..	Rs. 45,364	..	Rs. 43,398

Infant Mortality.—The following statement gives in tabular form the figures relating to infant deaths and infant mortality rates for 1938, 1939, and the average for 10 years (1929-1938) :—

Infant Deaths.	Whole Island.	Urban Areas.	Rural Areas.
1937 ..	34,180 ..	5,328 ..	28,852
1938 ..	33,630 ..	5,291 ..	28,339
1939 ..	35,173 ..	5,609 ..	29,564
Average 1929-1938 ..	35,555 ..	4,743 ..	30,812

Infant Mortality Rates.	Whole.	Urban.	Rural.	Ceylonese.	Indian Immigrant.	European.
1937 .. 158 ..	168 ..	157 ..	157 ..	169 ..	..	41
1938 .. 161 ..	159 ..	162 ..	160 ..	171 ..	..	38
1939 .. 166 ..	156 ..	168 ..	165 ..	169 ..	..	32
Average 1929-1938 176 ..	183 ..	175 ..	174 ..	187 ..	..	33

Maternal Mortality.—The following table sets out the figures of maternal deaths and the maternal death rates for 1938, 1939, and the average for 10 years (1929-1938).

Maternal Deaths.	Whole Island.	Urban.	Rural.
1937 ..	4,304 ..	1,001 ..	3,303
1938 ..	4,196 ..	1,000 ..	3,196
1939 ..	3,870 ..	904 ..	2,966
Average 1929-1938 ..	4,223 ..	845 ..	3,378

Maternal Mortality rates—

1937 ..	19·9 ..	31·6 ..	17·9
1938 ..	20·1 ..	30·1 ..	18·2
1939 ..	18·2 ..	25·1 ..	16·8
Average 1929-1938 ..	20·9 ..	32·4 ..	19·2

The maternal mortality rate of the 39 proclaimed towns during 1939 was as follows:—

Per 1,000 live births ..	..	..	25·1
Per 1,000 total births (live births plus still) ..	..	..	23·4

Stillbirths.—Information on stillbirths is available only for the proclaimed towns. During 1939 there were 2,590 stillbirths.

In areas where intensive work on health unit lines was possible to be carried out owing to personnel being available the infant death rates and maternal death rates are given in the Table below:—

Health Units.	Infant Death Rate.	Maternal Death Rate.
Matara ..	.. 145 ..	16·4
Kadugannawa ..	.. 125 ..	9·9
Trincomalee ..	.. 134 ..	11·7
Kurunegala ..	.. 235 ..	29·5
Padukka ..	.. 114 ..	3·9
Moratuwa ..	.. 113 ..	8
Kegalla ..	.. 138 ..	12·6
Panadure ..	.. 92 ..	8·8
Horana ..	.. 88 ..	8·6
Dehiwela ..	.. 138 ..	6·6
Kalutara ..	.. 80 ..	5·7

VI.—HOSPITALS DISPENSARIES AND VENEREAL DISEASES CLINICS.

Hospitals and Dispensaries.

General Remarks.—All parts of the Island are provided by the State with hospitals and dispensaries. Five new Cottage Hospitals were opened during the year. At the end of the year there were 120 hospitals with 11,137 beds.

The number of dispensaries, central (264), branch (180) and visiting stations (307), maintained by Government was 751 in 1939. The special institutions for the treatment of out-patients referred to in my last report continued during the year under review.

426,211 in-patients, with 22,786 deaths were treated in the various Government Hospitals. In the Government Dispensaries and out-patient departments attached to Government Hospitals 6,919,748 patients were treated.

Report on Colombo Hospitals.

A brief summary of the work done in the chief Colombo institutions is given below :—

General Hospital.—

At the end of the year 1938, there remained in the hospital 1,189 patients, 73 of whom were paying and 1,116 non-paying. The admissions during the year amounted to 33,295 patients comprising of 1,623 paying and 32,672 non-paying patients. The total treated in hospital during the year was therefore 34,484 as compared with 33,493 in the preceding year.

Of the total treated in hospital during 1939, 30,501 were discharged, 2,655 died, and 1,328 remained over at the end of December 31, 1939. The daily average sick being 1,415.08 as compared with 1,338.97 in the preceding year.

The maximum number of patients on any one day in hospital during the year was :—

Paying section ..	..	93 patients on 29.9.39
Non-paying section ..	..	1,613 patients on 29.6.39

and the minimum number of cases was—

Paying section ..	..	63 patients on 2.1.39
Non-paying section ..	..	992 patients on 9.9.39

The total number of surgical operations performed was 4,031 with 214 deaths as against 4,035 operations with 308 deaths in the year 1938. The number of minor operations performed at the Out-Patients' Department was 607.

At the Out-Patients' Department there were 125,911 patients treated whose visits amounted to 333,303 showing an increase of 138 patients with 18,413 visits as compared with the figures of 1938.

Ten years ago, in 1929, the numbers treated were 19,164 hospital cases and 29,666 with 173,931 visits at the outdoor. These figures disclose the enormous expansion of work at the hospital.

Special Diseases.—The following is a comparative statement showing the principal diseases treated in hospital during the year as compared with the preceding year :—

	1939.		1938.	
	Cases.	Deaths.	Cases.	Deaths.
Malaria ..	4,036 ..	157 ..	2,877 ..	96 ..
Enteric ..	934 ..	206 ..	662 ..	117 ..
Dysentery ..	271 ..	72 ..	427 ..	68 ..
Pulmonary tuberculosis ..	861 ..	194 ..	1,033 ..	231 ..
Ankylostomiasis ..	1,167 ..	48 ..	1,542 ..	27 ..
Pneumonia ..	1,568 ..	284 ..	1,243 ..	399 ..
Cancer ..	1,107 ..	75 ..	1,342 ..	115 ..

The following is a statement showing the attendance at a few of the various clinics held at the Out-patient Department during the year 1939 :—

		First Visits.	Subsequent Visits.
(1) Gynaecological Clinic ..	..	1,216 ..	1,813 ..
(2) Diabetes Clinic ..	..	302 ..	2,550 ..
(3) Heart Clinic ..	..	95 ..	401 ..
(4) Genito-urinary Clinic ..	..	3,076 ..	17,420 ..
(5) Asthma Clinic ..	..	80 ..	701 ..
(6) Nerve Clinic ..	..	21 ..	426 ..
(7) Skin Clinic ..	..	2,057 ..	4,573 ..
(8) Orthopoedic Clinic ..	..	21 ..	593 ..
(9) Varicose Vein and Rectal ..	..	207 ..	669 ..

Pathological Department.—The following number of specimens was examined and reported upon during 1939:—

Urine	43,857
Faeces	17,646
Gastric contents	2,325
Sputa	4,392
Blood	33,073
Fluids	1,684
Smears	1,158
Specimens for Histological examinations	3,335
Blood Transfusion service	1,356
Post-mortems held	281
	109,107

X'Ray Department.—14,705 patients in the non-paying section and 1,297 patients in the paying section, making a total of 16,002 patients, underwent X'ray examination. The details of X-ray examinations are as follows:—

Fracture 5,032, Lungs 2,146, Bone disease 1,891, Urinary and Biliary tracts 2,015, Alimentary Canal 1,310, Examination for foreign bodies 629, Tuberculosis Spine, Hip, &c., 530, Heart 508, Nasal and Accessory sinuses 784, Tumours 201, Abdomen for foetus 594, other cases 365.

Electrical Treatment.—No. of Patients treated 9,645. No. of sittings to paying patients 1,661. No. of sittings to non-paying patients, 11,632. Total number of treatments 13,293.

Radium Treatment.—No. of patients treated 253.

Dental Institute.—35,114 patients were treated during the year under review. The total number of visits made by the patients was 56,183.

The number of patients was made up as follows:—

1. Outdoor patients—adults	27,142
2. Children attending the school clinic	6,631
3. Indoor patients attending for dental treatment from the Government hospitals, Colombo	1,341

De Soysa Lying-in Home.—During the year under review the administration of this Institution underwent a change — a Medical Superintendent was appointed to administer the hospital and to relieve the Senior Visiting Obstetrician, who was performing these duties in addition to his work as Visiting Obstetrician.

Domiciliary Maternity Services.—This has been revived and accommodation has been provided for five students — in a house rented by the Ceylon Medical College close to the Lying-in Home. This work is confined to patients who attend the Ante-natal Clinic of this Institution.

Accommodation.—The bed strength of 159 beds to a daily average of 250 patients needs no comment. Additional buildings are in process of construction.

The volume of work done in the Institution has been steadily increasing from year to year. The figures given below indicate the increase of work since 1931.

This Institution is a training school for Nurses and Midwives in addition to medical students.

SCHEDULE OF CASES.

	1931.	1933.	1935.	1937.	1939.
Number of admissions and remaining from the previous year ..	5,716	6,476	6,731	10,736	128,599
Number of livebirths ..	3,812	4,420	4,409	6,124	7,570
Number of stillbirths ..	..	..	442	496	550
Number of miscarriages ..	127	190	170	273	307
Number of visits by patients who attended the Ante-natal Clinic ..	5,783	4,575	7,601	11,196	13,586
Number of visits by patients who attended the Post-natal Clinic ..	..	130	485	1,042	1,083
Number of babies that left the Hospital alive ..	..	3,728	4,042	5,737	7,024
Number of Obstetric operations ..	..	..	406	757	803

The Victoria Memorial Eye Hospital.—

		Beds.	Cots.
<i>Accommodation—</i>			
Paying patients ..	..	7	1
Non-paying patients ..	..	114	8
	Total ..	121	9

	1937.	1938.	1939.
Daily average indoor ..	202.01	258.90	254.50

Out-Patients' Department.—The following is a comparative statement of cases treated at the Out-Patients' Department of this hospital :—

		1937.	1938.	1939.
New cases	..	29,967	31,872	29,804
Subsequent visits	..	48,219	48,150	48,960
Total	..	78,186	80,022	78,764

Indoor Cases.—The following is a summary of cases treated during the year. The numbers are almost the same as that of the preceding year :—

Remaining on December 31, 1938	..	270
Admitted during the year 1939	..	3,408
Remaining on December 31, 1939	..	213
Discharged during 1939	..	3,455
Died during 1939	..	10
Daily average sick during 1937	..	202·01
Daily average sick during 1938	..	258·90
Daily average sick during 1939	..	254·50

Deaths that occurred during the year 1939 are as follows :—

Congenital Syphilis	..	..	2
Marasmus	..	..	2
Infantile Debility	..	..	1
Intussusception	..	..	1
Cavernous Sinus Thrombosis	..	..	1
Interstitial Nephritis	..	..	1
Coronary Thrombosis	..	..	1
Myocarditis	..	..	1
			—
Total	..	10	—

The total number of deaths for 1938 was 15.

School Eye Clinic.—The total number of children who were treated in the Clinic for the first time during the year 1939 was 523. The number treated in 1938 was 530 and that in 1937 was 463.

Work at Leper Asylum, Hendala.—For the examination and treatment of eye cases, the Leper Asylum, Hendala, was visited three times during the year 1939 and 77 cases, of which 15 were old cases, were treated.

The Lady Havelock Hospital for Women and Lady Ridgeway Hospital for Children.—There are 6 paying and 40 non-paying beds in the women's hospital. During the year 2,590 patients were treated (110 paying and 2,480 non-paying) with a daily average of 66. This institution is a training school for nurses and female attendants.

In the children's hospital there are 129 non-paying beds. There are no paying wards in this institution. During the year 4,397 patients were treated, with a daily average of 161.

Female Venereal Diseases Hospital.—There are 42 beds. The total number of patients admitted during the year was 661, and the daily average of patients was 34. The principal diseases were syphilis (369 cases) and gonorrhoea (242 cases).

There is an out-patient department at this hospital where general diseases among women and children are treated and during the year 103,504 patients were dealt with.

Genito Urinary Clinics are held twice a week and in 10 years the figures have increased from 2,000 to 8,000.

The Infectious Diseases Hospital (Angoda), Colombo.—There remained 150 patients in hospital at the end of 1938 and 4,930 patients were admitted during 1939 making the total treated 5,080. Of these 317 cases proved fatal, giving a mortality rate of 6.2 per cent. The total number of beds is 168.

The following are some of the infectious diseases treated and the number of deaths in 1939 :—

		No. treated.	Deaths.
Dysentery	..	665	87
Enteric fever	..	323	102
Measles	..	258	7
Whooping cough	..	49	4
Diphtheria	..	44	5
Mumps	..	163	1
Chickenpox	..	2,196	5

CONTROL OF TUBERCULOSIS.

In addition to the existing Special Institutions (*vide* Administration Report of 1938) a Preventorium of 24 beds (12 males and 12 females) was completed at Kandana and the construction of a hospital of 300 beds (180 males and 120 females) was commenced at Welisara.

Cases are admitted to all the hospitals in the Island through their respective out-patients departments. The General Hospital, Colombo, has a daily average of about 72 cases.

A general survey of the incidence of tuberculosis which had been started about three years back, was completed. The figures classified, age-grouped, &c., was published in the Ceylon Branch of the British Medical Journal Volume XXXVI, No. 6, including a technical article arising from the results.

The following works are under consideration :—

- (a) The construction of a tuberculosis hospital at Hambantota of 100 beds as a memorial to King George V.
- (b) The improvement of Mihintale Hospital to be opened as a tuberculosis hospital for the North-Central Province.
- (c) The provision of separate wards for males and females in the existing hospitals for tuberculosis patients. One new ward is under construction at Jaffna and it was proposed to improve immediately wards at Galle, Karawanella, Matale and Matara.
- (d) The establishment of fully equipped clinics for chest diseases at Kandy, Galle, Jaffna, Kalutara, Ratnapura, Kurunegala and Badulla and smaller clinics at subsidiary centres.

Tuberculosis Control.—With the object of laying down the lines on which the organization of tuberculosis control should be developed, the Assistant Director of Sanitary Services submitted the following proposals for consideration and preliminary action was taken :—

- (1) There should be an officer at the Head Office in charge of the subject. This has been already provided.
- (2) A Departmental Committee on Tuberculosis should be formed of which one of the Assistant Directors should be the Chairman and the Officer-in-Charge of the subject at the Head Office, the Secretary.
- (3) A survey of tuberculosis should be carried out and should precede the establishment of control. This will necessitate the training of a Medical Officer. The Rockefeller Foundation will consider an application for fellowship studies for the purpose.
- (4) On the findings of the survey should depend the establishment of Central Tuberculosis Dispensaries and subsidiary clinics around which the work of control should be centred.
- (5) The establishment of Central Tuberculosis Dispensaries.
- (6) The establishment of subsidiary clinics in charge of Medical Officers of Health and Field Medical Officers. These officers will provide dispensary and domiciliary care, look after contacts and carry out educational work.
- (7) Local authorities should make themselves responsible for relief and they should establish Tuberculosis Care Committees for their areas to which members of the public should be co-opted. They would provide—
 - (a) care of those returned from sanatoria and hospitals;
 - (b) relief to patients and patients' families;
 - (c) preventoria;
 and will work in conjunction with local tuberculosis dispensaries.

Funds for the work of the Care Committee to be provided by the local authority and/or from central funds.

- (8) Regarding treatment, the provision of accommodation at district hospitals.
- (9) The question of a Central Tuberculosis Association for the Island to create and maintain general interest and the method of getting local authorities to share in the work should receive consideration as well as the establishment of settlements or ex-patients colonies.

VENEREAL DISEASES.*

During 1939, there were seven fully established Special Treatment Centres for Venereal Diseases. Three of these were in Colombo and are the Venereal Diseases Clinic for men at the General Hospital, Colombo (in and out-patient), a clinic for women at the Female Branch Hospital (in and out-patient) and a clinic for seamen at the Port Health Office (out-patient). The four others are the treatment centres attached to the Galle and Kandy outdoor dispensaries and to the offices of the Medical Officers of Health, Panadure and Kalutara—the last two being opened during this year. All Provincial and District Hospitals are equipped for the treatment of Venereal Diseases cases and Officers-in-Charge were requested to establish outdoor clinics.

All Medical Officers of Health and Field Medical Officers under whom dispensaries are now placed, have been provided with equipment for the treatment of Venereal Diseases and have been requested to establish treatment centres either at any suitable dispensary or dispensaries, or at their offices. Several such treatment centres have been opened but have not been fully organized.

The construction of four new buildings for special treatment centres has been undertaken during the year at Jaffna, Badulla, Kurunegala, and Batticaloa and will be opened during 1940. The provision of increased accommodation to ten other dispensaries to enable special treatment centres to be started is under consideration.

* *Vide* p.23 General remarks, General Hospital.
p.24 Dental Institute, etc.

In April, 1939, Dr. H. C. P. Gunawardene returned with experience of organization of Venereal Diseases Work in England and several other countries in Europe, and was appointed Surgeon-in Charge, Genito-Urinary Clinic, Colombo—the new designation of the Venereal Diseases Clinic.

This department has made available to all practitioners, entirely free of charge, all pathological tests for diagnosis of Venereal Diseases.

Cards and forms for the proper recording and follow-up of cases, devised to suit local conditions, are being printed. Pamphlets and leaflets are in use in English, Sinhalese, and Tamil. A standard set of lantern slides is now available for lectures. Three films on Gonorrhoea and Syphilis have been purchased by the department and two films, the "Gift of Life" and "Social Hygiene for Women" obtained on loan from the British Social Hygiene Council in London. Twenty-six Cinema lectures were given to the public in Colombo and the provinces. On these occasions a Medical Officer was always in attendance to answer questions. The shows were well attended and highly appreciated. Steps are being taken to carry out further propaganda work. A memorandum on treatment is being drawn up by the Surgeon-in-Charge, Venereal Diseases Clinic, Colombo, to be made available to the smaller clinics. Leaflets on these diseases in English, Sinhalese, and Tamil are available.

MEDICAL INSTITUTIONS AIDED BY GOVERNMENT.

During the financial year 1938-39, 6 medical institutions received monetary grants and 21 institutions including Social Service Leagues received free grants of drugs.

VII.—PRISONS, MENTAL HOSPITAL AND LEPROSY CONTROL.

1.—PRISONS.

In the 9 prison hospitals with 333 beds, 7,399 inpatients were treated. There were 61 deaths. In the out-patient departments of these hospitals and in the Remand Prisons 69,901 patients were treated. The chief diseases treated were Malaria, Influenza, and Dysentery.

There were 3,933 convicted prisoners in all the Prisons on December 31, 1939. 19,936 convicted prisoners were admitted during the year.

2.—THE MENTAL HOSPITAL, ANGODA.

This institution has accommodation now for 2,512 male and female patients which includes suitable accommodation for 12 paying patients in separate villas housing two patients in each. There is no separate building called the House of Observation as the term would indicate. All persons sent for observation and all persons detained under a judicial order pending the orders of His Excellency the Governor are technically considered as remaining in the House of Observation.

The year under review opened with 3,331 patients in both institutions. The daily average of the inmates was 3,294—the largest number on any one day being 3,442 on November 23, 1939, and the lowest 3,231 on January 2, 1939. The daily average of the previous year was 3,148.

The statistics in detail for the year 1939 are as follows:—

Asylum—(certified lunatics).

	Males.	Females.	Total.
Remained on December 31, 1938	.. 1,993	.. 967	.. 2,960
Admitted in 1939	.. 665	.. 370	.. 1,035
Total treated in 1939	.. 2,658	.. 1,337	.. 3,995
Discharged in 1939	.. 487	.. 208	.. 695
Died in 1939	.. 166	.. 70	.. 236
Remained on December 31, 1939	.. 2,005	.. 1,059	.. 3,064

House of Observation (uncertified persons under observation).

	Males.	Females.	Total.
Remained on December 31, 1938	.. 159	.. 112	.. 271
Admitted in 1939	.. 1,537	.. 764	.. 2,301
Total treated in 1939	.. 1,696	.. 876	.. 2,572
Discharged in 1939	.. 737	.. 335	.. 1,072
Transferred to the Asylum	.. 648	.. 366	.. 1,014
Died in 1939	.. 90	.. 43	.. 133
Remained on December 31, 1939	.. 221	.. 132	.. 353

Admissions.—The following table gives comparative figures of admissions for three years:—

	Asylum.			House of Observation.		
	Males.	Females.	Total.	Males.	Females.	Total.
1937	.. 858	.. 456	.. 1,314	.. 1,687	.. 839	.. 2,526
1938	.. 821	.. 418	.. 1,239	.. 1,581	.. 789	.. 2,370
1939	.. 665	.. 370	.. 1,035	.. 1,537	.. 764	.. 2,301

Discharges.—487 males and 208 females making a total of 695 discharged patients include cases recovered, relieved of symptoms, partially recovered or discharged at the request of guardians on security.

Agricultural Activities.—Agricultural activities, which were mainly directed to fruit growing, are steadily continuing to improve.

Industries and Occupation Therapy.—All industries of this institution are now proceeded with on a restricted scale and are confined to articles that are required for use in the institution.

3.—LEPROSY CONTROL.

General.—By the end of 1939 in 7 years the survey of 7/8ths of the Island was completed.

Of the total 2,627 cases, 1,025 cases were in the Asylums and 1,602 were outside on parole.

Seventy-three cases were discharged on parole during the year making a total of 276 such cases to the end of 1939. There were 177 deaths during the year and 669 total deaths up to the end of 1939, and 339 new cases (263 males and 73 females) were detected during 1939.

Leprosy Clinics.—There were 18 Leprosy Clinics for treatment, observation and propaganda.

Schools.—During 1939, 117,232 children in 731 schools were examined in the Northern and North-Central Provinces and 22 cases detected.

Propaganda.—Active propaganda with lectures, posters, pamphlets was carried out at exhibitions, schools and villages. At the Central Clinic lectures and demonstrations to medical students, Field Medical Officers and Sanitary Assistants were given. All officers in the surveyed areas received instruction in early diagnosis and treatment.

Institution.—There are two Asylums, Hendala and Mantivu. A third hospital on the lines of an agricultural colony has been sanctioned by the State Council.

In addition to the routine, general and medical treatment, occupational therapy such as carpentry, rattanning, weaving and gardening is being gradually introduced.

Visitors.—During the year Dr. Richard Toledo of the Leprosy Hospital, Malta, Dr. Gordon Ryrie of Sungai, Buloh F.M.S. and Miss Laing, Mission to Lepers, Uganda, visited the Island and were shown the leprosy control measures in Ceylon.

Departmental Committee.—Two conferences were held where various aspects of Leprosy were discussed. An Advisory Departmental Committee on Leprosy was appointed in December, 1939, consisting of the Assistant Director of Medical Services, Assistant Director of Sanitary Services, Medical Officer Headquarters (Secretary), Medical Superintendent, Leper Asylum, Hendala, Medical Officer, Mantivu and the Medical Officers, Leprosy Campaign.

VIII.—SCIENTIFIC.

(1) BACTERIOLOGICAL INSTITUTE.

In this institute the following divisional activities are carried on. (1) Bacteriology. (2) Pasteur Institute. (3) Establishment for the preparation of Calf Lymph. (4) Division of Nutrition. (5) Microscopical examination of stools for intestinal parasites.

(i.) *Fees Collected.*—Rs. 8,891.65.

(ii.) The examinations carried out at the Bacteriological Institute for the year were:—Agglutination tests—18,462, Wasserman and Khan tests—14,770, Blood cultures—3,205, Malaria—3,472, B. pestis 119, Sputum for Tubercle bacilli—1,085, Sputa for pneumococci—58, Gonococci—2,238, B. diphteriae—1,557, Leprosy—35, Dysentery—1,961, Spirochaetes—18, Others—3,753. Total—50,869.

(iii.) *Vaccine Doses.*—Doses of vaccine prepared and issued were—Autogenous vaccine (10 doses)—96, T. A. Vaccine (doses)—83,436, Gonococcal Vaccine (doses)—20, Staphylococcal Vaccine (doses)—570, Streptococcal Vaccine (doses)—206. Total—114,202.

(iv.) *Outstation Fees Collected.*—Rs. 823.

Number of specimens:—V. M. Eye Hospital—11,198, Lying-in Home—12,575, Kandy—41,011, Galle—22,264, Kurunegala—10,688, Badulla—15,482, Ratnapura—9,301, Jaffna—8,498, Anuradhapura—6,600, Batticaloa—4,647, Trincomalee—4,597, Mandapam Camp—557, Leprosy—587, Cholera-Carriers—4,944. Total—6,709.

(v.) *The Pasteur Institute.*—The number of patients treated during the year:—Inpatients—890, Outpatients—740. Total—1,630. Of the above (1,269 were actually bitten, i.e., 77.85). The others were considered to be at slight risk such as the possibility of infected cuts or scratches.

The distribution (a) by province.—Western—607, Southern—578, Northern—166, Sabaragamuwa—84, Uva—67, North-Western—66, Central—55, North-Central—5, Eastern—2. Total—1,630.

(b) by race.—Sinhalese—1,244, Tamils—276, Burghers—48, Moors—29, Europeans—22, Malays—5, Malayalees—6. Total—1,630.

(c) *Sources of infection.*—Dog—1,557, Human—47, Cats—11, Jackal—6, Cow—4, Monkey—3, Bear—2, Goat—1. Total—1,630.

Of the above cases, 489 were positive microscopically, 280 were positive clinically, 769 were suspicious and in 92 the animal lived.

Material used.—Carbolized vaccine, method of treatment 7 to 21 injections according to risk.

Mortality.—Two deaths from hydrophobia.

(iv.) *Intestinal Parasites found in the course of Microscopical Examinations made.*—Number of specimens examined for hookworm, round worm, thread worm and tapeworm, by Stoll's method—10,639, by Willis' method—9,617. Total—20,256.

(vii.) *Calf Lymph.*—Calves used—576, Seed Lymph obtained from Lister Institute fortnightly or prepared at this institute.

Issues.—149,870 tubes sufficient for 449,610 persons. 2,267 tubes were sold. Percentage of successful vaccination 98.1.

(viii.) *Research.*—Typhus appears not to be uncommon in Ceylon. Four cases have been definitely diagnosed during the year by the usual laboratory tests.

Examination for Mycobacterium tuberculosis by culture and other methods.—All sputum sent for T. B. examination and microscopically negative has been cultured. Of the negative specimens 7.6 per cent. has been found to be positive by culture.

(ix.) *Examination for gonococcus.*—Cultural examination for gonococci has been found far more satisfactory than microscopical examination. Of 1,388 examinations 9.5 per cent. were positive microscopically and of 1,163 examinations 18.2 per cent. positive culturally.

(x.) *Preparation of double distilled salines.*—This was started in September and 398 bottles and ampoules have been supplied to the Civil Medical Stores.

(2) THE NUTRITION DIVISION.

Hospital Diets.—A Committee appointed in November, 1938, "to study hospital diets and to make recommendations," consisted of the Director of the Bacteriological Institute, the Professors of Medicine and Surgery and the Medical Officer for Nutrition. A long report has been forwarded.

Prison Diets.—The improvements recommended have been sanctioned.

Diets of Orphanages have been studied and a pamphlet of recommendations distributed to all orphanages.

Diets of Estate Labourers.—Dietary surveys have been carried out on estates. A pamphlet has been issued to all Estate Superintendents.

Nutritional Surveys of school children have been commenced by health officers throughout Ceylon.

Rural Dietary Surveys have been made in a few selected villages in Ceylon.

Lectures on Nutrition have been given to medical students, sanitary assistants and learners, and public health nurses.

Propaganda.—Much has been done.

Research Publications.—

- (1) "Bitots' Spots in Ceylon". Lancet, June 24, 1939.
- (2) "The Treatment of Eye, Skin and Mouth Lesions due to Vitamin Deficiencies". Ind. Journ. Med. Res., January, 1940.
- (3) "Adaptation to a low Calcium Intake in reference to the requirements of a Tropical Population". Journ. Nut., December 10, 1939.
- (4) "Eye, Skin and other Defects probably due to Vitamin A Deficiency", the Sixth Pacific Science Congress, California, 1939, and accepted for publication.

(3) MEDICAL ENTOMOLOGY.

Teaching.—Lecture and demonstrations (field and laboratory) on Medical Entomology with special reference to malaria and the Anopheline mosquitoes of Ceylon were given to Field Officers appointed to the Malaria Control Scheme, to Sanitary Learners, and to Field and Laboratory Assistants. Short courses were also arranged for officers of the Railway and Irrigation Departments. In all 91 officers attended courses of instruction.

Laboratory and Field Work (Malaria).—As in the past the greater part of the laboratory and field work of the Division was directly associated with malaria and its prevention and control; but work on filariasis, rat-fleas, and house and bazaar flies was also undertaken. Entomological work at the malaria campaign centres (see section on Preventive Measures, page 6 of this report) was continued as in previous years, and mosquito surveys and investigations into local malaria problems were undertaken at Trincomalee, Mantivu, Ambalangoda, and Hakmana. Experimental work on larvicidal oils was commenced in August and is still proceeding. Reports on the spreading and toxic powers of the oils used in anti-malaria work in Ceylon and on a variety of other oil mixtures were prepared. In the course of this work it was shown that the spreading powers of oils, which under laboratory conditions had proved satisfactory, were subject to considerable variation in the field; a high percentage of natural waters possessed properties which strongly inhibited the spreading of these oil mixtures.

The field studies on malaria commenced in 1935, and having as one of their main objects the detection of the approach of conditions liable to cause increased malaria or malaria epidemics were continued on the same lines as described in previous reports. During the present year the value of the scheme was shown, as the results obtained from the Observation Stations

enabled specific warnings of the danger of a malaria epidemic (relating to some 5,000 square miles of country) to be given to the control organization from three to eight weeks before the actual outbreaks occurred. This epidemic broke out with remarkable abruptness about the middle of April and affected a very wide area of country. Its onset followed immediately upon the heavy rains of the early part of April, and was preceded by a long period of drought during which the volume of water in the rivers and streams of the 'Intermediate' and large sections of the 'WET' climatic zones became greatly reduced leaving the beds exposed with abundant pool formation. Early in February the entomological findings indicated that control measures were necessary in particular areas and oiling of the river and stream beds in the vicinity of several of the observation stations situated in the 'Intermediate' climatic zone was recommended. By the end of February the situation—from the entomological point of view—was definitely serious, and wide spread oiling was adopted.

The following table briefly summarizes the field and laboratory work undertaken in connection with this scheme during the year.

Malaria Observation Stations.

Summary of work, January to December, 1939.

Locality.	No. of Stations.	Adult Mosquitoes					Larvae.		
		Houses examined.	Night trapping (Hours).	Mosquitoes collected and examined.	Mos- quitoes dissected	Mos- quitoes infected (Anoph- pheles).	Mos- quitoes with Malaria*.	Potential breeding places examined.	Anopheles Larvae collected and examined.
Epidemic Zone—									
(a) Western area ..	29 ..	16,448 ..	8,651 ..	92,838 ..	64,216 ..	28,417 ..	116 ..	16,210 ..	246,027
(b) Southern area ..	8 ..	2,283 ..	2,212 ..	15,289 ..	22,115 ..	5,028 ..	21 ..	5,892 ..	41,976
(c) Eastern Hill zone ..	4 ..	2,038 ..	1,190 ..	20,449 ..	9,831 ..	5,702 ..	16 ..	2,253 ..	36,007
Non-Epidemic Zone—									
Wet zone ..	4 ..	2,045 ..	1,157 ..	9,000 ..	28,448 ..	2,324 ..	— ..	4,359 ..	24,003
Eastern Littoral ..	4 ..	2,484 ..	975 ..	25,102 ..	7,701 ..	2,572 ..	— ..	2,183 ..	19,587
Jaffna Peninsula ..	5 ..	3,682 ..	1,022 ..	10,341 ..	5,357 ..	2,347 ..	1 ..	2,726 ..	63,915
Total ..	54	28,980	15,207	173,019	137,668	46,390	154	33,623	431,515

* Infections with malaria parasites were found in *A. culicifacies* only.

A comparision of the number of infected mosquitoes found during the years 1938 and 1939 is given below :—

Mosquitoes Infected with Malaria Parasites.

Locality.	1938 (12 months).			1939 (11 months).		
	No. of <i>A. culicifacies</i> dissected.	No. infected.	No. of <i>A. culicifacies</i> dissected.	No. infected.		
Epidemic zone—						
(a) Western area	3,627 ..	23 ..	8,168 ..	..	116
(b) Southern area	298 ..	10 ..	397 ..	..	21
(c) Eastern Hill Zone	216 ..	2 ..	728 ..	..	16
Non-epidemic zone						
Wet zone	..	Nil ..	Nil ..	1 ..	..	Nil
Eastern littoral ..		46 ..	Nil ..	18 ..	..	Nil
Jaffna Peninsula	549 ..	Nil ..	473 ..	..	1
Total	4,736	35	9,785 ..	..	154

Filariasis.—The entomological work associated with the experimental control measures at Bandara Koswatta in the North-Western Province was continued on the lines detailed in previous reports. During the year nine examinations of the control and contrast areas were made. The total catch amounted to 15,891 mosquitoes of which 7,330 were obtained from the control areas and 8,561 from the contrast village of Magulagama. The catch included a large number of different species of Anopheline and Culicine mosquitoes. Only 524 (3.3 per cent) of the mosquitoes were species of *Mansonia*, and 477 (91 per cent.) of these were obtained from the uncontrolled area at Magulagama.

Infections with immature worms similar to larval forms of Filaria were found as follows :—

- (a) Protected Zone : Dissections, 1,599. Infections 5. (*M. uniformis* 2, *Aedes pipersalatus* 2, and *Anopheles hyrcanus* 1.)
- (b) Outer Control Zone : Dissections 905. Infections 2. (*Armigeres obturbans* 1, *Culex sitiens* 1.)
- (c) Magulagama : Dissections 3,034. Infections 13. (*M. uniformis* 5, *A. pipersalatus* 3, *A. obturbans* 2, *A. subpictus* 1, *B. lineathopennis* 1, and *Aedes sp. incert* 1.)

Rat Flea Surveys.—Four consignments of rat-fleas collected from the business quarters of Gallo Municipality were examined.

(4) PUBLICATIONS.

Twenty papers were published by the officers of the department in various Journals. Most of them appear in the British Medical Journal (Ceylon Branch) Volume 36 and in "The Transactions of the Society of Medical Officers of Health of Ceylon" Volume VIII.

IX.—MISCELLANEOUS.

(1) MEDICAL EDUCATION.

At the commencement of the year, 1939, there were 181 students on the roll.

The improvements made in teaching arrangements in recent years are evinced by the greater interest and enthusiasm shown by the students in their clinical and laboratory work. The results of the Final Examination were also very satisfactory. During the year 23 students qualified for the Licence in Medicine and Surgery (L.M.S., Ceylon), and 13 of these passed the Final Examination in the first class.

The high standard of education maintained at the College has increased the demands on it, and before long it may be necessary to adopt measures to restrict admissions to the College. Already admission is restricted to Ceylonese and a large number of applications from outside the Island have had to be refused.

During the year the curriculum of the College was carefully revised in accordance with the latest regulations of the General Medical Council. The revised curriculum came into force in October, 1939.

Provision of quarters for students doing resident appointments was an urgent need, and satisfactory arrangements for this purpose were made.

Dr. C. W. Startup was appointed Professor of Physiology and Registrar, Ceylon Medical College.

Dr. E. W. Arndt, Lecturer in Ophthalmology, retired from the service on October 1, 1939, and was succeeded by Dr. A. F. Seneviratne.

The building programme commenced on the recommendations of Sir Richard Needham made satisfactory progress during the year. The new wing of the Anatomy Block, providing a large tutorial laboratory, a new preparation room and a Departmental library, has been completed and is in use. The new Pathology Block, which is under construction, will make generous provision for the housing of the Department of Pathology.

The Dental School which was started in January, 1938, was closed in November, 1939, for want of a sufficient number of students. The course provided was solely for post-graduates and all the six students who followed the dental course passed the Final Examination, and qualified for the Licence to practice Dental Surgery. It is proposed to reopen the school to give a full dental curriculum for students not already possessing a dental qualification.

During the year, original contributions to scientific literature were made by Dr. W. C. O. Hill, Professor of Anatomy, Dr. M. A. Paul, Professor of Surgery, and Dr. P. B. Fernando, Professor of Medicine.

The following are particulars of research work done by members of the College Staff :—

By Dr. W. C. O. Hill, Professor of Anatomy.

- (1) Studies on Veddah crania (Universities of Oxford, Edinburgh, Cambridge, and Royal College of Surgeons, London).
- (2) Studies on Primate development (Royal College of Surgeons).
- (3) Collaboration with Dr. A. J. E. Cave and Sir Frank Colyer in research regarding the structure and status of the Red Colobus Monkey (*Piliocolobus*) of the French Cameroons.

By Dr. P. B. Fernando, Professor of Medicine.

- (1) An investigation into the value of *Toraenia Asiatica* (Sinhalese :—*Kotala Himbutu*) as a therapeutic agent in Diabetes Mellitus. This work is being carried out in collaboration with Dr. S. F. Jayawardena, the Lecturer in Pharmacology, Ceylon Medical College.
- (2) An investigation into the therapeutic activity of an Ayurvedic extract used as a cure for malaria and sold under the name of Dr. Roberts, Anti-malaria Mixture.
- (3) An investigation into the degree of impairment of hepatic activity in certain diseased conditions—This work which was commenced last year is being carried out.

By Dr. S. F. Jayawardena, Lecturer in Pharmacology.

Isolation of Kaolin from Ceylon clay and the preparation of Kataplasma Kaolin. This preparation was experimentally and clinically tested, and found to be as good as the imported variety. Investigations into the medicinal properties of indigenous herbs. Over 50 preparations have been made and tried in the Hospital. So far there has been evidence of the efficiency of two herbs—one in the treatment of diabetes and the other as a diuretic.

By Dr. A. A. Hoover, Lecturer in Biochemistry.

Experiments of a preliminary nature were carried out to test the efficacy of a drug reducing the blood sugar of normal rabbits and diabetic patients. There has been a certain amount, of success and the investigations are being continued. A complete analysis of certain foodstuffs was also carried out.

Dr. W. A. E. Karunaratne, Professor of Pathology, received an invitation to present a paper on Rhinosporidiosis before the Third International Congress of Microbiology at New York. This paper was read at New York on September 4, 1939. Among the special features stressed in this paper were uncommon sites of occurrence, differences in the racial incidence of the disease in Ceylon and certain histological features hitherto not described.

(2) CIVIL MEDICAL STORES.

The following are extracts from the report of the Superintendent, Civil Medical Stores. The expenditure under drugs, dressings, instruments, &c., is as follows :—

	Expenditure.		1937-38.	1938-39.
			Rs.	Rs.
Drugs, dressings, &c.—				
Crown Agents	576,335	.. 670,000
Local purchases	104,512	.. 99,400
Local (paying Patients)	25,260	.. 26,600
			<hr/>	<hr/>
			706,107	796,000
Quinine	430,930	.. 791,300
Instruments	56,712	.. 49,200
Opium	6,263	.. 5,415
Stationery	15,963	.. 10,120
Printed forms	44,883	.. 33,350
Transport	1,855	.. 2,025
Requisitions dealt with.				
			No.	No.
Civil, Drugs, half-yearly	713	.. 756
Civil, Drugs, intermediate	3,594	.. 4,316
Civil, Quinine	2,647	.. 4,203
Civil, Sera	1,420	.. 1,357
Civil, Provisions	510	.. 610
Civil, Instruments	2,588	.. 2,907
Civil, Stationery and printed forms, half-yearly	1,112	.. 1,011
Civil Stationery intermediate	3,541	.. 3,916
Estates, Drugs, half-yearly	1,312	.. 1,295
Estates, Drugs, intermediate	210	.. 168
Estates, Quinine	1,225	.. 1,532
Estates, Printed forms	1,783	.. 1,636
Naval, Drugs	42	.. 33
	Total ..	<hr/>	20,697	<hr/> 23,740

Estates.

	Rs.	Rs.
Cost of drugs issued on payment .	.. 1,352	.. 2,827

The issues of the principal preparations of quinine were as follows :—

	1938-39.
Quinine Sulph and Bisulph	.. .. 31,418
Quinine Mixt. Cone.	.. .. 79,450
Quinine Tabs. ..	.. .. 8,263,650

The cost of drugs issued to estates during the year was Rs. 281,335.

Preparations manufactured during the year cost Rs. 40,000. Their imported cost would have been Rs. 86,000—a saving of Rs. 46,000.

(3) SALE OF OPIUM TO REGISTERED CONSUMERS AND AYURVEDIC PHYSICIANS.

Of the 49 existing depots only one, viz., Maradana Depot, is now housed in a private building and the rest are in Government hospitals and dispensaries.

The total number of registered consumers during 1939 was 1538 and out of these 1,375 obtained eating opium and 165 smoking opium. There were 3,507 registered ayurvedic physicians who obtained opium for medicinal purposes.

The amount realized by the sale of eating opium (552 lb.) was Rs. 58,008 and smoking opium (65 lb.) was Rs. 9,178.

X.—GENERAL REVIEW.

(1) OUTSTANDING EVENTS.

The outstanding events of the year are the reorganizing of the Department, the establishment of the Malaria Field Training Centre at Kurunegala, the All-Ceylon Malaria Week, and the opening of the New Training Home for Nurses.

As a result of a decision of the Ministry of Health the work of the Department was centralized. The Provincial Surgeons who were in charge of both medical and health work in